Todd M. Schneider (SBN 158253)
Matthew S. Weiler (SBN 236052)
SCHNEIDER WALLACE COTTRELL KONECKY LLP
2000 Powell Street, Suite 1400
Emeryville, CA 94608
Telephone: (415) 421-7100
TSchneider@schneiderwallace.com
MWeiler@schneiderwallace.com

Jason H. Kim (SBN 220279)
SCHNEIDER WALLACE COTTRELL KONECKY LLP
300 S. Grand Ave., Suite 2700
Los Angeles, California 90071
Telephone: (415) 421-7100
JKim@schneiderwallace.com

Attorneys for Plaintiff and the Proposed classes

Peter B. Schneider (*Pro Hac Vice*)
SCHNEIDER WALLACE COTTRELL KONECKY LLP
3700 Buffalo Speedway, Suite 960
Houston, TX 77098
Telephone: (713) 338-2560
PSchneider@schneiderwallace.com

Michael Dell'Angelo (*Pro Hac Vice*)
BERGER MONTAGUE
1818 Market Street, Suite 3600
Philadelphia, PA 19103
Telephone: (215) 875-3000
mdellangelo@bm.net

UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ERIK D. LOEWEN, on behalf of himself and others similarly situated, Plaintiff, v. APPLE INC., Defendant.	Case No. **CLASS ACTION COMPLAINT**

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I. INTRODUCTION

1. Defendant Apple Inc. ("Apple") revolutionized communication, information, and entertainment when it developed the iPhone. Apple's cutting edge technology gave it an advantage over competitors, and Apple has wielded its power to thwart and frustrate technology that threatens its lucrative iPhone empire.

2. For consumers, what began as innovation has been the ultimate double-edged sword. Apple uses a "lock in" strategy to ensure that the costs of switching to competing technology are prohibitively high, and Apple has erected a gauntlet of interoperability obstacles that makes interacting with non-Apple smartphones cumbersome in important respects.

3. Apple's continued dominance of the smartphone market has come at a tremendous cost to consumers. Apple launched the first generation iPhone in 2007, at an MSRP of $499. Current models, the fifteenth generation, sell for $1000 or more. Prices of iPhones have remained stubbornly high, even with the entry of other competitors in the smartphone market.

4. To maintain its dominance, Apple uses "lock in" to retain consumers. As prominent investor Warren Buffet explained, "You are very, very, very locked in, at least psychologically and mentally, to the product you are using. [The iPhone] is a very sticky product."[1] But the "lock in" is more than psychological.

5. "To leave an ecosystem, customers face switching costs equivalent to the value provided by the product being replaced and the beneficial interactions it had with other products and customers. Customers will only leave if the value provided by the replacement product exceeds the switching cost. The more synergy between products, the greater the switching costs and the harder it is to leave. As a result, consumers become locked in to an ecosystem as they buy more of its constituent products and face higher switching costs. This effect helps companies like Apple

[1] https://qz.com/1216371/warren-buffett-loves-apple-because-consumers-are-psychologically-attached-to-the-iphone

create inelastic demand, in which customers demand similar quantities of a good even at higher prices."[2]

6. Apple's "lock in" system is part of a carefully crafted campaign to make the product "sticky" by design. In 2010, Steve Jobs discussed how to "further lock customers into our ecosystem" and "make Apple['s] ecosystem even more sticky." Three years later, Apple executives were still strategizing how to "get people hooked to the ecosystem."

7. The problem Apple had, as articulated by one executive, is consumers could buy "a [expletive] Android for 25 bux at a garage sale and it works fine . . . . And you have a solid cloud computing device. Imagine how many cases like that there are."

8. Apple's iPhone monopoly dwarfs any other aspect of Apple's revenues. Apple monetizes its monopoly by charging for related services, apps, and features. Apple creates a captive audience of its products and services by counter-programming third party technology.

9. The five pillars of Apple's "lock in" strategy are as follows:

10. **Frustrating Super Apps.** A "super app" would threaten Apple's iPhone empire by facilitating switching between smartphones. Apple ensures that no competing technology will emerge with functionality that allows consumers to switch between smartphone platforms. Apple does so with programming and through contracts. These restrictions have no procompetitive purpose.

11. **Suppressing Competing Cloud Streaming Services.** Cloud based gaming and streaming services would allow consumers to enjoy games and digital content without being locked into a device. Apple has blocked the development of cloud-streaming apps and services that would allow consumers to enjoy high-quality video games and other cloud-based applications, requiring consumers to pay for its expensive iPhone rather than stream this digital content. This restriction has no procompetitive justification.

[2] https://usceconreview.com/2020/01/13/the-evolution-of-the-apple-ecosystem/

12. **Diminishing Cross-Platform Messaging Communication.** Apple degrades the quality of messaging with competing smartphones such as Android, making the quality of cross-platform messaging worse, less innovative, so that its customers have to keep buying iPhones. For example, "Apple downgrades texts between iPhones and Android phones into SMS and MMS, outdated tech from the '90s and '00s. But Apple can adopt RCS – the modern industry standard – for those texts instead. Solving the problem without changing iPhone-to-iPhone conversations, and making messaging better for everyone."[3]

13. **Diminishing the Functionality of Non-Apple Smartwatches.** Apple locks its users in, in part, by blocking interoperability between its Apple Watch and other smartphones like Android. This imposes another economic cost on users who have Apple Watches and are thinking of switching to another smartphone.

14. **Limiting Third Party Digital Wallets.** If iPhone users could use "tap to pay" technology similar to Apple Pay from a third party app, another barrier to switching smartphones would fall. Apple prevents third-party apps from offering this tap-to-pay functionality, inhibiting the creation of cross-platform third-party digital wallets.

15. Apple's scheme impairs competition, and diminishes the value of its iPhone technology to consumers. Consumers pay increasing prices for generations of iPhones that have reduced interoperability with other smartphones, and diminished iPhone users' ability to access services and information through third party apps, devices, and other technologies.

16. Apple's scheme is manifestly anticompetitive because it results in more expensive and less functional iPhones. Apple maintains its dominance through its "lock in" strategy and not by having a superior product.

17. Without its anticompetitive "lock in" strategy Apple would lose market power to innovative competitors, and competing smartphone manufacturers would restrain Apple's ability to continue to price its iPhones at such high margins.

[3] https://www.android.com/get-the-message/

18. Apple's margins are twice what competing smartphone manufacturers' margins are, fifteen years after the iPhone was introduced. Morgan Stanley recently estimated Apple's profit margins on the iPhone device alone at 30-35%. Apple pads its profits by extracting up to 30% from app developers, and third-party services within its platform, that Apple paid nothing to develop. Apple also reaps fees from purchases through Apple Pay, hose content, internet searches, and other downstream features that its captive users utilize.

19. Plaintiff and other iPhone purchasers are injured by paying supracompetitive prices for their iPhones. Plaintiff, who purchased his iPhone from his telecommunications carrier, seeks to represent a class of indirect purchasers under Section 2 of the Sherman Act and state competition and consumer law.

II. BACKGROUND

20. Apple is based in Cupertino, California, and has been manufacturing computers since 1976.

21. Although a behemoth today, Apple's fortunes have historically turned based on changes in consumer preference and competition from lower-priced computer manufacturers.

22. Apple's fortunes changed with the launch of the iPod in 2001. Apple's iTunes application allowed iPod users to organize their song library and update their iPod. A path-clearing antitrust enforcement case, brought by the United States and state attorneys general, against Microsoft opened the market and constrained Microsoft's ability to prohibit companies like Apple from offering iTunes on Windows PCs. Licensing agreements with the major music labels allowed Apple to offer iPod/iTunes users a wide selection of music for a fee-per-download. The iPod experience gave Apple a recipe for the future: a premium device, a large number of platform participants (i.e., music labels and consumers), and a digital storefront. More importantly, it gave Apple a playbook: drive as many consumers and third-party participants to the platform as possible and offer a wide selection of content, products, and services created by those third parties to consumers. This structure put Apple in the driver's seat to generate substantial revenues through

device sales in the first instance and subsequently the ancillary fees that it derives from sitting between consumers on the one hand and the products and services they love on the other.

23. Apple's experience with the iPod set the stage for Apple's most successful product yet. In 2007, Apple launched the iPhone, a smartphone that offered high-end hardware and software applications, called "apps," built atop a mobile operating system that mimicked the functionality and ease of use of a computer. Apple initially offered only a small number of apps that it created for the iPhone. But Apple quickly realized the enormous value that a broader community of entrepreneurial, innovative developers could drive to its users and the iPhone platform more broadly. So Apple invited and capitalized on the work of these third parties while maintaining control and monetizing that work for itself. The value of third parties' work served an important purpose for Apple. Indeed, as early as 2010, then-CEO Steve Jobs discussed how to "further lock customers into our ecosystem" and "make Apple['s] ecosystem even more sticky."[4] Three years later, Apple executives were still strategizing how to "get people hooked to the ecosystem."[5]

24. That strategy paid off. Over more than 15 years, Apple has built and sustained the most dominant smartphone platform and ecosystem in the United States by attracting third-party developers of all kinds to create apps that users could download on their smartphones through a digital storefront called the App Store. As developers created more and better products, content, apps, and services, more people bought iPhones, which incentivized even more third parties to develop apps for the iPhone. Today, the iPhone's ecosystem includes products, apps, content, accessories, and services that are offered by content creators, newspaper publishers, banks, advertisers, social media companies, airlines, productivity developers, retailers and other merchants, and others. As Apple's power grew, its leverage over third parties reinforced its tight control over how third parties innovate and monetize on and off the smartphone in ways that were anticompetitive and exclusionary.

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[4] See *United States v. Apple Inc.*, Case No. 2:24-cv-04055, ECF No. 1 at ¶ 3 (D.N.J.).
[5] *Id.*

25. Today, Apple charges as much as $1,599 for an iPhone and earns high margins on each one, more than double those of others in the industry. When developers imagine a new product or service for iPhone consumers, Apple demands up to 30 percent of the price of an app whose content, product, or service it did not create. Then when a consumer wants to buy some additional service within that app, Apple extracts up to another 30 percent, again for a service Apple does not create or develop. When users run an internet search, Google gives Apple a significant cut of the advertising revenue that an iPhone user's searches generate.

26. Apple keenly understands that while a community of developers and accessory makers is indispensable to the success of the iPhone, they also pose an existential threat to its extraordinary profits by empowering consumers to "think different" and choose perfectly functional, less-expensive and potentially more innovative and attractive alternative smartphones.

27. Apple's smartphone business model, at its core, is one that invites as many participants, including iPhone users and third-party developers, to join its platform as possible while using contractual terms to extract substantial renumeration from them. At the same time, Apple restricts its platform participants' ability to negotiate or compete down its prices through alternative app stores, in-app payment processors, and more.

28. In order to protect that model, Apple reduces competition in the market for smartphones. It does this by delaying, degrading, or outright blocking technologies that would facilitate competition in the smartphone markets by decreasing barriers to switching to another smartphone, among other things. The suppressed technologies would provide a high-quality user experience on any smartphone, which would, in turn, require smartphones to compete on their merits.

29. Apple suppresses such innovation through a web of contractual restrictions that it selectively enforces through its control of app distribution and its "app review" process, as well as by denying access to key points of connection between apps and the iPhone's operating system (called Application Programming Interfaces or "APIs"). Apple can enforce these restrictions due

to its position as an intermediary between product creators such as developers on the one hand and users on the other.

30. This complaint highlights five examples of Apple using these mechanisms to suppress technologies that would have increased competition among smartphones. Suppressing these technologies does not reflect competition on the merits. Rather, to protect its smartphone monopoly—and the extraordinary profits that monopoly generates—Apple repeatedly chooses to make its products worse for consumers to prevent competition from emerging. These examples below individually and collectively have contributed to Apple's ability to secure, grow, and maintain its smartphone monopoly by increasing switching costs for users, which leads to higher prices, fewer choices, reduced quality-adjusted output, and less innovation for users and developers. Apple has used one or both mechanisms (control of app distribution or control of APIs) to suppress the following technologies, among others:

- Super apps provide a user with broad functionality in a single app. Super apps can improve smartphone competition by providing a consistent user experience that can be ported across devices. Suppressing super apps harms all smartphone users—including Apple users—by denying them access to high quality experiences and it harms developers by preventing them from innovating and selling products.
- Cloud streaming game apps provide users with a way to play computing intensive games in the cloud. Cloud streaming games (and cloud streaming in general) can improve smartphone competition by decreasing the importance of expensive hardware for accomplishing high-compute tasks on a smartphone. Suppressing cloud streaming games harms users by denying them the ability to play high-compute games, and it harms developers by preventing them from selling such games to users.
- Messaging apps allow users to communicate with friends, family, and other contacts. Messaging apps that work equally well across all smartphones can improve competition among smartphones by allowing users to switch phones

without changing the way they communicate with friends, family, and others. Apple makes third-party messaging apps on the iPhone worse generally and relative to Apple Messages, Apple's own messaging app, by prohibiting third-party apps from sending or receiving carrier-based messages. By doing so, Apple is knowingly and deliberately degrading quality, privacy, and security for its users and others who do not have iPhones. Apple also harms developers by artificially constraining the size of their user base.

- Smartwatches are an expensive accessory that typically must be paired to a smartphone. Smartwatches that can be paired with different smartphones allow users to retain their investment in a smartwatch when switching phones thereby decreasing the literal cost associated with switching from one smartphone to another, among other things. By suppressing key functions of third-party smartwatches—including the ability to respond to notifications and messages and to maintain consistent connections with the iPhone—Apple has denied users access to high performing smartwatches with preferred styling, better user interfaces and services, or better batteries, and it has harmed smartwatch developers by decreasing their ability to innovate and sell products.
- Digital wallets are an increasingly important way that smartphones are used and are a product in which users develop a great deal of comfort and trust as they typically contain users' most sensitive information. Digital wallets that work across smartphone platforms allow users to move from one smartphone brand to another with decreased frictions, among other things. Apple has denied users access to digital wallets that would have provided a wide variety of enhanced features and denied digital wallet developers—often banks but also including other smartphone manufacturers—the opportunity to provide advanced digital payments services to their own customers.

31. By maintaining its monopoly over smartphones, Apple is able to harm consumers in a wide variety of additional ways. For example, by denying iPhone users the ability to choose their trusted banking apps as their digital wallet, Apple retains full control both over the consumer and also over the stream of income generated by forcing users to use only Apple-authorized products in the digital wallet. Apple also prohibits the creation and use of alternative app stores curated to reflect a consumer's preferences with respect to security, privacy, or other values. These and many other features would be beneficial to consumers and empower them to make choices about what smartphone to buy and what apps and products to patronize. But allowing consumers to make that choice is an obstacle to Apple's ability to maintain its monopoly.

32. Of course, this is not the story Apple presents to the world. For decades, Apple branded itself a nimble, innovative upstart. In 1998, Apple co-founder Steve Jobs criticized Microsoft's monopoly and "dirty tactics" in operating systems to target Apple, which prompted the company "to go to the Department of Justice" in hopes of getting Microsoft "to play fair."[6] But even at that time, Apple did not face the same types of restrictions it imposes on third parties today; Apple users could use their iPod with a Windows computer, and Microsoft did not charge Apple a 30 percent fee for each song downloaded from Apple's iTunes store. Similarly, when Apple brought the iPhone to market in 2007, it benefited from competition among component makers and wireless carriers.

33. While Apple's anticompetitive conduct arguably has benefited its shareholders—to the tune of over $77 billion in stock buybacks in its 2023 fiscal year alone—it comes at a great cost to consumers. Some of those costs are immediate and obvious, and they directly affect Apple's own customers: Apple inflates the price for buying and using iPhones while preventing the development of features like alternative app stores, innovative super apps, cloud-streaming games, secure texting, and digital wallet options.

[6] See *United States v. Apple Inc.*, Case No. 2:24-cv-04055, ECF No. 1 at ¶ 12 (D.N.J.).

34. Other costs of Apple's anticompetitive conduct may be less obvious in the immediate term. But they are no less harmful and even more widespread, affecting all smartphone consumers. Apple's smartphone monopoly means that it is not economically viable to invest in building some apps, like digital wallets, because they cannot reach iPhone users. This means that innovations fueled by an interest in building the best, most user-focused product that would exist in a more competitive market never get off the ground. What's more, Apple itself has less incentive to innovate because it has insulated itself from competition. As Apple's executives openly acknowledge: "In looking at it with hindsight, I think going forward we need to set a stake in the ground for what features we think are 'good enough' for the consumer. I would argue we're already doing *more* than what would have been good enough. But we find it very hard to regress our product features YOY [year over year]." Existing features "would have been good enough today if we hadn't introduced [them] already," and "anything new and especially expensive needs to be rigorously challenged before it's allowed into the consumer phone."[7] Thus, it is not surprising that Apple spent more than twice as much on stock buybacks and dividends as it did on research and development.

35. Apple wraps itself in a cloak of privacy, security, and consumer preferences to justify its anticompetitive conduct. Indeed, it spends billions on marketing and branding to promote the self-serving premise that only Apple can safeguard consumers' privacy and security interests. Apple selectively compromises privacy and security interests when doing so is in Apple's own financial interest—such as degrading the security of text messages, offering governments and certain companies the chance to access more private and secure versions of app stores, or accepting billions of dollars each year for choosing Google as its default search engine when more private options are available. In the end, Apple deploys privacy and security justifications as an elastic shield that can stretch or contract to serve Apple's financial and business interests.

III. DEFENDANT APPLE

[7] See *United States v. Apple Inc.*, Case No. 2:24-cv-04055, ECF No. 1 at ¶ 14 (D.N.J.) (emphasis in original).

36. Apple is a global technology company with headquarters in Cupertino, California. Apple is one of the world's most valuable public companies with a market capitalization over $2.5 trillion. In fiscal year 2023, Apple generated annual net revenues of $383 billion and net income of $97 billion. Apple's net income exceeds any other company in the Fortune 500 and the gross domestic products of more than 100 countries.

37. The iPhone, Apple's signature product, is the primary driver of Apple's growth and profitability, routinely commanding profit margins of more than 30 percent on devices alone—significantly higher than its smartphone competitors. iPhone sales have made up a majority of Apple's annual revenue every year since 2012.[8]

38. Apple increasingly extracts revenue from iPhone users beyond the initial smartphone sale. For example, Apple offers iPhone upgrades, apps and in-app payments, paid digital subscription services (e.g., Apple's music streaming, TV, news, gaming, fitness, and cloud storage subscriptions), accessories (e.g., tracking devices, headphones, chargers, iPhone cases), and more. Apple refers to these offerings as "Services" and "Wearables, Home, and Accessories," respectively. In fiscal year 2023, these offerings accounted for nearly one-third of Apple's total revenue, or four times what Apple earned from selling Mac computers. Some of the largest drivers of revenue within these categories are Apple's smartwatch, the Apple Watch, and Apple's App Store, where iPhone users purchase and download apps. In recent years, Services have accounted for an increasing share of Apple's revenues, while the iPhone has remained the primary gateway through which U.S. consumers access these services.

39. Apple's U.S. market share by revenue is over 65 percent for all smartphones. This market share has remained remarkably durable over the last decade.[9]

40. Apple's smartphone market shares understate Apple's dominance and likely growth in key demographics, including among younger American consumers. For example, one-third of all iPhone users in the United States were born after 1996, as compared to just 10 percent

[8] *See id.* at ¶ 20.
[9] *See id.* at ¶ 22.

for Samsung, Apple's closest smartphone competitor. Surveys show that as many as 88 percent of U.S. teenagers expect to purchase an iPhone for their next smartphone.[10] iPhone users also tend to come from higher income households. Because smartphone users generally use a single smartphone to access related products and services, locking up key user groups allows Apple to capture greater spending on iPhone-related products and services, realize higher margins per user as compared to its smartphone rivals, and exercise greater control over developers and other smartphone ecosystem participants.[11]

41. In fiscal year 2023, Apple spent $30 billion on research and development. By comparison, Apple spent $77 billion on stock buybacks during the same year.[12]

IV. PLAINTIFF

42. Plaintiff is a resident of San Francisco. Plaintiff purchased numerous iPhones during the Class Period. In September 2022, Plaintiff purchased in iPhone 14 Pro Max from AT&T online from his home in San Francisco.

43. As a result of the anticompetitive and monopolistic practices alleged in this Complaint, Plaintiff paid supracompetitive prices for his iPhones. Plaintiff has also been directly injured by the reductions in consumer choice, quality, and innovation brought about by Apple's anticompetitive and monopolistic practices.

V. FACTUAL ALLEGATIONS

A. Apple Launches iPhone and Leverages Third -Party Developers to Enhance the Platform.

44. In January 2007, Apple debuted the first-generation iPhone, describing the device as "an iPod, a phone, and an internet communicator," and touting the fact that users could "sync[] content from a user's iTunes library on their PC or Mac." Apple marketed the iPhone as a smartphone that was easy to use. Reflecting on the company's learning from the iPod, Apple's

[10] Piper Sandler, *Taking Stock with Teens* (Fall 2023 Survey), https://www.pipersandler.com/teens.
[11] *See id.* at ¶ 23.
[12] *See id.* at ¶ 24.

then-CEO announced, "iTunes is going to sync all your media to your iPhone—but also a ton of data. Contacts, calendars, photos, notes, bookmarks, email accounts."[13]

45. The original iPhone cost approximately $299—approximately $450 in 2024 dollars adjusted for inflation—with a two-year contract with a phone carrier.

46. At launch, nearly all native apps for the iPhone were created by Apple. There were only about a dozen apps overall, including Calendar, Camera, Clock, Contacts, iPod, Messages, Notes, Phone, Photos, Safari, Stocks, Voice Memos, and Weather.

47. Within a year of launching the iPhone, Apple invited third-party developers to create native apps for the iPhone. Apple released its first software development kit—essentially the digital tools for building native apps on Apple's operating system (iOS)—to encourage and enable third-party developers to create native apps for the iPhone. Apple also offered developers ways to earn money by selling apps and later in-app purchases and subscriptions. By 2009, Apple was running marketing campaigns highlighting the value that third-party apps provide to iPhone users with the trademarked slogan: "There's an app for that."

48. Apple's decision to invite third-party participation on its iPhone platform benefited Apple, too. The proliferation of third-party apps generated billions of dollars in profits for Apple and an iPhone user base of more than 250 million devices in the United States. Apple's market shares—over 65 percent of the smartphone market—likely understate its monopoly power today.

49. While Apple profits from third-party developers that increase the iPhone's value to users, Apple executives understand that third-party products and services can, in their own words, be "fundamentally disruptive" to Apple's smartphone monopoly, decreasing users' dependence on Apple and the iPhone and increasing competitive pressure on Apple.[14] Apple therefore willingly sacrifices the short-term benefits it would gain from improved products and services developed by third parties when necessary to maintain its monopoly.

[13] *See id.* at ¶ 35.
[14] *See id.* at ¶ 40.

B. Apple Invited Third-Party Investment of The iPhone and Then Imposed Tight Controls on App Creation and App Distribution

50. Apple controls how developers distribute and create apps for iPhone users. For example, developers can only distribute native iPhone apps through Apple's App Store, which is the only way for users to download native iOS apps. Limiting distribution to the Apple App Store enables Apple to exert monopoly power over developers by imposing contractual restrictions and rules that limit the behavior of non-Apple apps and services. Specifically, Apple sets the conditions for apps it allows on the Apple App Store through its App Store Review Guidelines. Under these guidelines, Apple has sole discretion to review and approve all apps and app updates. Apple selectively exercises that discretion to its own benefit, deviating from or changing its guidelines when it suits Apple's interests and allowing Apple executives to control app reviews and decide whether to approve individual apps or updates. Apple often enforces its App Store rules arbitrarily. And it frequently uses App Store rules and restrictions to penalize and restrict developers that take advantage of technologies that threaten to disrupt, disintermediate, compete with, or erode Apple's monopoly power.

51. Apple also controls app creation by deciding which APIs are available to developers when they make third-party apps. For example, developers cannot provide native apps on the iPhone unless they enter into Apple's non-negotiable Developer Program License Agreement (DPLA). That agreement requires developers to use public APIs only "in the manner prescribed by Apple." It also prohibits third-party apps from using APIs that Apple designates as "private." Apple selectively designates APIs as public or private to benefit Apple, limiting the functionality developers can offer to iPhone users even when the same functionality is available in Apple's own apps, or even select third-party apps. Similar to Apple's App Store restrictions, Apple uses its DPLA to impose restrictions that penalize and restrict developers that take advantage of technologies that threaten to disrupt, disintermediate, compete with, or erode Apple's monopoly power.

52. Developers cannot avoid Apple's control of app distribution and app creation by making web apps—apps created using standard programming languages for web-based content

and available over the internet—as an alternative to native apps. Many iPhone users do not look for or know how to find web apps, causing web apps to constitute only a small fraction of app usage. Apple recognizes that web apps are not a good alternative to native apps for developers. As one Apple executive acknowledged, "[d]evelopers can't make much money on the web."[15] Regardless, Apple can still control the functionality of web apps because Apple requires all web browsers on the iPhone to use WebKit, Apple's browser engine—the key software components that third-party browsers use to display web content.

53. Nor can developers rely on alternative app stores even though this would benefit developers and users. For example, developers cannot offer iPhone users an app store that only offers apps curated for use by children, which would provide opportunities to improve privacy, security, and child safety. By contrast, Apple allows certain enterprise and public sector customers to offer versions of app stores with more curated apps to better protect privacy and security.

54. Apple's control over both app distribution and app creation gives Apple tremendous power. For example, Apple designates as "private" the APIs needed to send Short Message Service, or SMS, text messages, which is a protocol used by mobile carriers since the early 1990s to allow users to send basic text messages to other mobile phone numbers using their own mobile phone numbers. Developers have no technical means to access these private APIs, but even if they did, doing so would breach their developer agreement with Apple, and therefore put the developer at risk of losing the ability to distribute apps through the App Store. For example, Apple prohibits third-party iPhone apps from sending or receiving SMS[16] text messages even though this functionality is available through Apple Messages. Likewise, Apple can control the functionality of third-party apps and accessories through its control of app distribution because if an app includes functionality that Apple does not like, Apple can and does exercise its discretion to simply block the app from the App Store.

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[15] *See id*. at ¶ 43.

[16] Following industry practice, throughout this complaint, "SMS" refers to both SMS and MMS ("multimedia messaging service"). MMS is a companion protocol to SMS that allows for group messages and messages with basic multimedia content, such as small file sharing.

55. Apple's dominance is such that iPhone users cannot benefit from lower cost or higher quality means of distributing apps or purchasing and providing digital products and services. Instead, Apple guarantees that it continues to benefit from the contributions of third-party developers and other platform participants while also protecting itself from the competitive threats and pressure those participants pose to Apple's smartphone monopoly.

VI. SMARTPHONES AS PLATFORMS

56. Smartphones combine the functionality of a traditional mobile phone with advanced hardware and software components. This cluster of services and features results in a distinct product for consumers and developers. For example, smartphones not only make phone calls, but also allow users to listen to music, send text messages, take pictures, play games, access software for work, manage their finances, and browse the internet.

57. Platforms such as smartphones bring together different groups that benefit from each other's participation on the platform. A food delivery app, for example, is a multisided platform that brings together restaurants, couriers, and consumers. A two-sided platform, for example, may bring together service providers on the one hand and consumers on the other. The technology and economics of a smartphone platform are fundamentally different from the technology and economics of a simultaneous transaction platform, such as a credit card, because smartphone platforms compete over device features and pricing in ways that do not directly relate to app store transactions. Whereas credit card transactions reflect a single simultaneous action that requires both sides of the transaction for either side to exist, consumers value smartphone platforms for a variety of reasons separate from their ability to facilitate a simultaneous transaction. Consumers care about non-transactional components of the phone, such as its camera and processing speed, and they care about non-transactional components of apps, such as their features and functionality.

58. The economics of a smartphone platform are such that the platform's value to users—and in turn to the platform operator—increase when new apps and new features are added to the platform. In order to create these economic benefits for itself and its users, Apple has opened

its smartphone platform to third-party developers, whose countless inventions and innovations have created enormous value. Apple has willingly opened the platform to third-party developers to capture this value even though there is no extensive regulatory framework requiring it to do so or overseeing how it interacts with those third parties. In this way, smartphone platforms are very different from other platforms, like landline telephone networks, whose value-adding features were built primarily by the platform operator and which were only opened to third parties when the platform operator was required to do so by regulation. When a third-party developer for the iPhone creates a valuable new feature, consumers benefit and consumer demand goes up for Apple's products, increasing the economic value of the iPhone to Apple. This has played out hundreds of thousands of times for the iPhone, resulting in an enormously valuable smartphone platform reflecting the combined contributions of millions of developers.

59. In contrast, limiting the features and functionality created by third-party developers—and therefore available to iPhone users—makes the iPhone worse and deprives Apple of the economic value it would gain as the platform operator. It makes no economic sense for Apple to sacrifice the profits it would earn from new features and functionality unless it has some other compensating reason to do so, such as protecting its monopoly profits.

VII. APPLE UNLAWFULLY MAINTAINS ITS MONOPOLY POWER

A. Apple Harms Competition by Imposing Contractual Restrictions, Fees and Taxes on App Creation and Distribution

60. Soon after the iPhone's introduction and notwithstanding its success, the company began to fear that disintermediation of its platform and the commoditization of the iPhone would threaten Apple's substantial profits from iPhone sales and related revenue streams.

61. Accordingly, Apple exercised its control of app creation and app distribution in key cases to cement the iPhone and App Store as the primary gateway to apps, products, and services. Apple often claims these rules and restrictions are necessary to protect user privacy or security, but Apple's documents tell a different story. In reality, Apple imposes certain restrictions to benefit

its bottom line by thwarting direct and disruptive competition for its iPhone platform fees and/or for the importance of the iPhone platform itself.

62. Three aspects of Apple's efforts to protect and exploit its smartphone monopoly are worth noting. First, Apple exercises its control over app distribution and app creation to dictate how developers innovate for the iPhone, enforcing rules and contractual restrictions that stop or delay developers from innovating in ways that threaten Apple's power. In so doing, Apple influences the direction of innovation both on and off the iPhone.

63. Second, Apple drives iPhone users away from products and services that compete with or threaten Apple. In doing so, Apple increases the cost and friction of switching from the iPhone to another smartphone and generates extraordinary profits through subscription services (like Apple's proprietary music, gaming, cloud storage, and news services), advertisements within the App Store, and accessories like headphones and smartwatches.

64. Third, Apple uses these restrictions to extract monopoly rents from third parties in a variety of ways, including app fees and revenue-share requirements. For most of the last 15 years, Apple collected a tax in the form of a 30 percent commission on the price of any app downloaded from the App Store, a 30 percent tax on in-app purchases, and fees to access the tools needed to develop iPhone native apps in the first place. While Apple has reduced the tax it collects in certain instances, Apple still extracts 30 percent from many app transactions.

65. As Apple exercised its control of app distribution and app creation, Apple slowed its own iPhone innovation and extracted more revenue and profit from its existing customers through subscriptions, advertising, and cloud services. These services increase the cost of switching from the iPhone to another smartphone because many of these services—including its proprietary gaming, cloud storage, and news service—are exclusive to the Apple ecosystem, causing significant frictions for iPhone users who try to use alternative services on another smartphone. Moreover, Apple's conduct demonstrates that Apple recognized the importance of digital products and services for the success of the iPhone while at the same time it restricted the

development and growth of non-iPhone products and services—especially those that might make it easier for users to switch from the iPhone to another smartphone.

66. Each step in Apple's course of conduct built and reinforced its smartphone monopoly. The cumulative effect of this course of conduct has been to maintain and entrench Apple's smartphone monopoly at the expense of consumers such as Plaintiff. Despite major technological changes over the years, Apple's power to control app creation and distribution and extract supracompetitive rents has remained largely the same, unconstrained by competitive pressures or market forces. That this conduct is impervious to competition reflects the success of Apple's efforts to create and maintain its smartphone monopoly, the strength of that monopoly, and the durability of Apple's power.

67. Apple's monopoly maintenance has taken many forms and continues to evolve today; however, Apple's anticompetitive and exclusionary course of conduct is exemplified by its contractual rules and restrictions targeting several products and services: super apps, cloud streaming apps, messaging apps, smartwatches, and digital wallets. By stifling these technologies, and many others, Apple reinforces its smartphone monopoly not by making its products more attractive to users, but by discouraging innovation that threatens Apple's smartphone monopoly or the disintermediation of the iPhone. Apple continues to expand and shift the scope and categories of anticompetitive conduct such that the cumulative anticompetitive effect of Apple's conduct is even more powerful than that of each exclusionary act standing alone.

1. Super Apps: Apple prevented apps from threatening its smartphone monopoly by undermining mini programs that reduce user dependence on the iPhone.

68. For years, Apple denied its users access to super apps because it viewed them as "fundamentally disruptive" to "existing app distribution and development paradigms" and ultimately Apple's monopoly power. Apple feared super apps because it recognized that as they become popular, "demand for iPhone is reduced."[17] So, Apple used its control over app distribution

[17] *See id*. at ¶ 60.

and app creation to effectively prohibit developers from offering super apps instead of competing on the merits.

69. A super app is an app that can serve as a platform for smaller "mini" programs developed using programming languages such as HTML5 and JavaScript. By using programming languages standard in most web pages, mini programs are cross platform, meaning they work the same on any web browser and on any device. Developers can therefore write a single mini program that works whether users have an iPhone or another smartphone.

70. Super apps can provide significant benefits to users. For example, a super app that incorporates a multitude of mini programs might allow users to easily discover and access a wide variety of content and services without setting up and logging into multiple apps, not unlike how Netflix and Hulu allow users to find and watch thousands of movies and television shows in a single app. As one Apple executive put it, "who doesn't want faster, easier to discover apps that do everything a full app does?" Restricting super apps makes users worse off and sacrifices the short-term profitability of iPhones for Apple.

71. Super apps also reduce user dependence on the iPhone, including the iOS operating system and Apple's App Store. This is because a super app is a kind of middleware that can host apps, services, and experiences without requiring developers to use the iPhone's APIs or code.

72. As users interact with a super app, they rely less on the smartphone's proprietary software and more on the app itself. Eventually, users become more willing to choose a different smartphone because they can access the same interface, apps, and content they desire on any smartphone where the super app is also present. Moreover, developers can write mini programs that run on the super app without having to write separate apps for iPhones and other smartphones. This lowers barriers to entry for smartphone rivals, decreases Apple's control over third-party developers, and reduces switching costs.

73. Apple recognizes that super apps with mini programs would threaten its monopoly. As one Apple manager put it, allowing super apps to become "the main gateway where people

play games, book a car, make payments, etc." would "let the barbarians in at the gate." Why? Because when a super app offers popular mini programs, "iOS stickiness goes down."[18]

74. Apple's fear of super apps is based on first-hand experience with enormously popular super apps in Asia. Apple does not want U.S. users to benefit from similar innovations. For example, in a Board of Directors presentation, Apple highlighted the "[u]ndifferentiated user experience on [a] super platform" as a "major headwind" to growing iPhone sales in countries with popular super apps due to the "[l]ow stickiness" and "[l]ow switching cost." For the same reasons, a super app created by a U.S. company would pose a similar threat to Apple's smartphone dominance in the United States. Apple noted as a risk in 2017 that a potential super app created by a specific U.S. company would "replace[ ] usage of native OS and apps resulting in commoditization of smartphone hardware."[19]

75. Apple did not respond to the risk that super apps might disrupt its monopoly by innovating. Instead, Apple exerted its control over app distribution to stifle others' innovation. Apple created, strategically broadened, and aggressively enforced its App Store Guidelines to effectively block apps from hosting mini programs. Apple's conduct disincentivized investments in mini program development and caused U.S. companies to abandon or limit support for the technology in the United States.

76. In particular, part of what makes super apps valuable to consumers is that finding and using mini programs is easier than using an app store and navigating many separate apps, passwords, and set-up processes. Instead of making mini program discovery easy for users, however, Apple made it nearly impossible.

77. Since at least 2017, Apple has arbitrarily imposed exclusionary requirements that unnecessarily and unjustifiably restrict mini programs and super apps. For example, Apple required apps in the United States to display mini programs using a flat, text-only list of mini programs. Apple also banned displaying mini programs with icons or tiles, such as descriptive

[18] *See id.* at ¶ 65.
[19] *See id.* at ¶ 66.

pictures of the content or service offered by the mini program. Apple also banned apps from categorizing mini programs, such as by displaying recently played games or more games by the same developer. These restrictions throttle the popularity of mini programs and ultimately make the iPhone worse because it discourages developers from creating apps and other content that would be attractive to iPhone users.

78. Apple also selectively enforced its contractual rules with developers to prevent developers from monetizing mini programs, hurting both users and developers. For example, Apple blocked mini programs from accessing the APIs needed to implement Apple's in-app payment (IAP) system—even if developers were willing to pay Apple's monopoly tax. Similarly, Apple blocked developers' ability to use in-app payment methods other than directly using IAP. For instance, super apps could create a virtual currency for consumers to use in mini programs, but Apple blocked this too. Apple, however, allows other, less-threatening apps to do so.

2. Cloud Streaming Apps: Apple prevented developers from offering cloud gaming apps that reduce dependence on the iPhone's expensive hardware.

79. For years, Apple blocked cloud gaming apps that would have given users access to desirable apps and content without needing to pay for expensive Apple hardware because this would threaten its monopoly power. In Apple's own words, it feared a world where "all that matters is who has the cheapest hardware" and consumers could "buy[] a [expletive] Android for 25 bux at a garage sale and … have a solid cloud computing device" that "works fine."[20] Apple's conduct made its own product worse because consumers missed out on apps and content. This conduct also cost Apple substantial revenues from third-party developers. At the same time, Apple also made other smartphones worse by stifling the growth of these cross-platform apps on other smartphones. Importantly, Apple prevented the emergence of technologies that could lower the price that consumers pay for iPhones.

[20] *See id.* at ¶ 71.

80. Cloud streaming apps let users run a computationally intensive program without having to process or store the program on the smartphone itself. Instead, a user's smartphone leverages the computing power of a remote server, which runs the program and streams the result back to the phone. Cloud streaming allows developers to bring cutting-edge technologies and services to smartphone consumers—including gaming and interactive artificial intelligence services—even if their smartphone includes hardware that is less powerful than an iPhone.

81. Cloud streaming has significant benefits for users. For example, Apple has promoted the iPhone 15 by promising that its hardware is powerful enough to enable "next-level performance and mobile gaming." But powerful hardware is unnecessary if games are played via cloud streaming apps. For a cloud game, the user experiences and plays the game on the smartphone, but the game is run by hardware and software in remote computing centers ("the cloud"). Thus, cloud gaming apps deliver rich gaming experiences on smartphones without the need for users to purchase powerful, expensive hardware. As a result, users with access to cloud streamed games may be more willing to switch from an iPhone to a smartphone with less expensive hardware because both smartphones can run desirable games equally well.

82. Cloud streaming also has significant advantages for developers. For example, instead of re-writing the same game for multiple operating systems, cloud platforms can act as middleware that allow developers to create a single app that works across iOS, Android, and other operating systems. Cloud streaming provides more and simpler options for offering subscriptions, collecting payments, and distributing software updates as well. All of this helps game developers reach economies of scale and profitability they might not achieve without offering cloud gaming apps and reduces their dependence on iOS and Apple's App Store.

83. Apple wielded its power over app distribution to effectively prevent third-party developers from offering cloud gaming subscription services as a native app on the iPhone. Even today, none are currently available on the iPhone.

84. For years, Apple imposed the onerous requirement that any cloud streaming game—or any update to a cloud streaming game—be submitted as a stand-alone app for approval

by Apple. Having to submit individual cloud streaming games for review by Apple increased the cost of releasing games on the iPhone and limited the number of games a developer could make available to iPhone users. For example, the highest quality games, referred to as AAA games, typically require daily or even hourly updates across different platforms. If these updates need to be individually approved by Apple, developers must either delay their software updates across all platforms or only update their games on non-iOS platforms, potentially making the iOS version of the game incompatible with other versions on other platforms until Apple approves the update. Neither option is tenable for players or developers.

85. Until recently, Apple would have required users to download cloud streaming software separately for each individual game, install identical app updates for each game individually, and make repeated trips to Apple's App Store to find and download games. Apple's conduct made cloud streaming apps so unattractive to users that no developer designed one for the iPhone.

86. Apple undermines cloud gaming apps in other ways too, such as by requiring cloud games to use Apple's proprietary payment system and necessitating game overhauls and payment redesigns specifically for the iPhone. Apple's rules and restrictions effectively force developers to create a separate iOS-specific version of their app instead of creating a single cloud-based version that is compatible with several operating systems, including iOS. As a result, developers expend considerable time and resources re-engineering apps to bring cross-platform apps like multiplayer games to the iPhone.

87. Cloud streaming apps broadly speaking—not just gaming—could force Apple to compete more vigorously against rivals. As one Apple manager recognized, cloud streaming eliminates "a big reason for high-performance local compute" and thus eliminates one of the iPhone's advantages over other smartphones because then "all that matters is who has the cheapest hardware." Accordingly, it reduces the need for users to buy expensive phones with advanced

hardware. This problem does not "stop at high-end gaming," but applies to "a number of high-compute requirement applications."[21]

B. Apple Uses APIs and Other Critical Access Points in the Smartphone Ecosystem to Control the Behavior and Innovation of Third Parties in Order to Insulate Itself from Competition

1. Messaging: Apple protects its smartphone monopoly by degrading and undermining cross-platform messaging apps and rival smartphones.

88. Apple undermines cross-platform messaging to reinforce "obstacle[s] to iPhone families giving their kids Android phones." Apple could have made a better cross-platform messaging experience itself by creating iMessage for Android but concluded that doing so "will hurt us more than help us."[22] Apple therefore continues to impede innovation in smartphone messaging, even though doing so sacrifices the profits Apple would earn from increasing the value of the iPhone to users, because it helps build and maintain its monopoly power.

89. Messaging apps allow smartphone users to communicate with friends, family, and other contacts and are often the primary way users interact with their smartphones. In Apple's own words, messaging apps are "a central artery through which the full range of customer experience flows."[23]

90. Smartphone messaging apps operate using "protocols," which are the systems that enable communication and determine the features available when users interact with each other via messaging apps.

91. One important protocol used by messaging apps is SMS. SMS offers a broad user network, but limited functionality. For example, all mobile phones can receive SMS messages, but SMS does not support modern messaging features, such as large files, edited messages, or reactions like a "thumbs up" or a heart.

92. Many messaging apps—such as WhatsApp, Facebook Messenger, and Signal—use proprietary, internet-based protocols, which are sometimes referred to as OTT ("over the top")

[21] *See id.* at ¶ 79.
[22] *See id.* at ¶ 80.
[23] *See id.* at ¶ 81.

protocols. OTT messaging typically involves more secure and advanced features, such as encryption, typing indicators, read receipts, the ability to share rich media, and disappearing or ephemeral messages. While all mobile phones can send and receive SMS messages, OTT only works between users who sign up for and communicate through the same messaging app. As a result, a user cannot send an OTT message to a friend unless the friend also uses the same messaging app.

93. Apple makes third-party messaging apps on the iPhone worse generally and relative to Apple Messages, Apple's own messaging app. By doing so, Apple is knowingly and deliberately degrading quality, privacy, and security for its users. For example, Apple designates the APIs needed to implement SMS as "private," meaning third-party developers have no technical means of accessing them and are prohibited from doing so under Apple's contractual agreements with developers. As a result, third-party messaging apps cannot combine the "text to anyone" functionality of SMS with the advanced features of OTT messaging. Instead, if a user wants to send somebody a message in a third-party messaging app, they must first confirm whether the person they want to talk to has the same messaging app and, if not, convince that person to download and use a new messaging app. By contrast, if an Apple Messages user wants to send somebody a message, they just type their phone number into the "To:" field and send the message because Apple Messages incorporates SMS and OTT messaging.

94. Apple prohibits third-party developers from incorporating other important features into their messaging apps as well. For example, third-party messaging apps cannot continue operating in the background when the app is closed, which impairs functionality like message delivery confirmation. And when users receive video calls, third-party messaging apps cannot access the iPhone camera to allow users to preview their appearance on video before answering a call. Apple Messages incorporates these features.

95. If third-party messaging apps could incorporate these features, they would be more valuable and attractive to users, and the iPhone would be more valuable to Apple in the short term. For example, by incorporating SMS, users would avoid the hassle of convincing someone to

download a separate app before sending them a message. Third-party messaging apps could also offer the ability to schedule SMS messages to be sent in the future, suggest replies, and support robust multi-device use on smartphones, tablets, and computers—as they have already done on Android.

96. Moreover, messaging apps benefit from significant network effects—as more people use the app, there are more people to communicate with through the app, which makes the app more valuable and in turn attracts even more users. Incorporating SMS would help third-party messaging apps grow their network and attract more users. Instead, Apple limits the reach of third-party messaging apps and reinforces network effects that benefit Apple.

97. Recently, Apple has stated that it plans to incorporate more advanced features for cross-platform messaging in Apple Messages by adopting a 2019 version of the RCS protocol (which combines aspects of SMS and OTT). Apple has not done so yet, and regardless it would not cure Apple's efforts to undermine third-party messaging apps because third-party messaging apps will still be prohibited from incorporating RCS just as they are prohibited from incorporating SMS. Moreover, the RCS standard will continue to improve over time, and if Apple does not support later versions of RCS, cross-platform messaging using RCS could soon be broken on iPhones anyway.

98. In addition to degrading the quality of third-party messaging apps, Apple affirmatively undermines the quality of rival smartphones. For example, if an iPhone user messages a non-iPhone user in Apple Messages—the default messaging app on an iPhone—then the text appears to the iPhone user as a green bubble and incorporates limited functionality: the conversation is not encrypted, videos are pixelated and grainy, and users cannot edit messages or see typing indicators. This signals to users that rival smartphones are lower quality because the experience of messaging friends and family who do not own iPhones is worse—even though Apple, not the rival smartphone, is the cause of that degraded user experience. Many non-iPhone users also experience social stigma, exclusion, and blame for "breaking" chats where other participants own iPhones. This effect is particularly powerful for certain demographics, like

teenagers—where the iPhone's share exceeds 85 percent, according to one survey. This social pressure reinforces switching costs and drives users to continue buying iPhones—solidifying Apple's smartphone dominance not because Apple has made its smartphone better, but because it has made communicating with other smartphones worse.

99. Apple recognizes that its conduct harms users and makes it more difficult to switch smartphones. For example, in 2013, Apple's Senior Vice President of Software Engineering explained that supporting cross-platform OTT messaging in Apple Messages "would simply serve to remove [an] obstacle to iPhone families giving their kids Android phones." In March 2016, Apple's Senior Vice President of Worldwide Marketing forwarded an email to CEO Tim Cook making the same point: "moving iMessage to Android will hurt us more than help us."[24]

100. In 2022, Apple's CEO Tim Cook was asked whether Apple would fix iPhone-to-Android messaging. "It's tough," the questioner implored Mr. Cook, "not to make it personal but I can't send my mom certain videos." Mr. Cook's response? "Buy your mom an iPhone."[25]

101. Recently, Apple blocked a third-party developer from fixing the broken cross-platform messaging experience in Apple Messages and providing end-to-end encryption for messages between Apple Messages and Android users. By rejecting solutions that would allow for cross-platform encryption, Apple continues to make iPhone users' less secure than they could otherwise be.

2. Smartwatches: Apple protects its smartphone monopoly by impeding the development of cross-platform smartwatches.

102. Apple uses smartwatches, a costly accessory, to prevent iPhone customers from choosing other phones. Having copied the idea of a smartwatch from third-party developers, Apple now prevents those developers from innovating and limits the Apple Watch to the iPhone to prevent erosion in iPhone sales.

[24] *See id.* at ¶ 91.
[25] *See id.* at ¶ 92.

103. Smartwatches are wrist-worn devices with an interactive display and accompanying apps that let users perform a variety of functions, including monitoring health data, responding to messages and notifications, performing mobile payments, and, of course, telling time. Smartwatches must generally be paired with a smartphone to operate and unlock their full functionality, such as receiving and responding to emails and text messages or answering phone calls. Because of the significant cost of buying a smartwatch, users are less willing to choose a smartphone if it is not compatible with their smartwatch.

104. Apple's smartwatch—Apple Watch—is only compatible with the iPhone. So, if Apple can steer a user towards buying an Apple Watch, it becomes more costly for that user to purchase a different kind of smartphone because doing so requires the user to abandon their costly Apple Watch and purchase a new, Android-compatible smartwatch.

105. By contrast, cross-platform smartwatches can reduce iPhone users' dependence on Apple's proprietary hardware and software. If a user purchases a third-party smartwatch that is compatible with the iPhone and other smartphones, they can switch from the iPhone to another smartphone (or vice versa) by simply downloading the companion app on their new phone and connecting to their smartwatch via Bluetooth. Moreover, as users interact with a smartwatch, e.g., by accessing apps from their smartwatch instead of their smartphone, users rely less on a smartphone's proprietary software and more on the smartwatch itself. This also makes it easier for users to switch from an iPhone to a different smartphone.

106. Apple recognizes that driving users to purchase an Apple Watch, rather than a third-party cross-platform smartwatch, helps drive iPhone sales and reinforce the moat around its smartphone monopoly. For example, in a 2019 email the Vice President of Product Marketing for Apple Watch acknowledged that Apple Watch "may help prevent iPhone customers from switching." Surveys have reached similar conclusions: many users say the other devices linked to their iPhone are the reason they do not switch to Android.

107. Apple also recognizes that making Apple Watch compatible with Android would "remove[an] iPhone differentiator."[26]

108. Apple uses its control of the iPhone, including its technical and contractual control of critical APIs, to degrade the functionality of third-party cross-platform smartwatches in at least three significant ways: First, Apple deprives iPhone users with third-party smartwatches of the ability to respond to notifications. Second, Apple inhibits third-party smartwatches from maintaining a reliable connection with the iPhone. And third, Apple undermines the performance of third-party smartwatches that connect directly with a cellular network. In doing so, Apple constrains user choice and crushes innovation that might help fill in the moat around Apple's smartphone monopoly.

109. The ability to respond to notifications, e.g., new messages or app alerts, directly from a smartwatch is one of the top considerations for smartwatch purchasers—and one of the most used product features when it is available. According to Apple's own market research, the ability to "[s]end and receive text messages from social and messaging apps" is a critical feature for a smartwatch.[27] In 2013, when Apple started offering users the ability to connect their iPhones with third-party smartwatches, Apple provided third-party smartwatch developers with access to various APIs related to the Apple Notification Center Service, Calendar, Contacts, and Geolocation. The following year, Apple introduced the Apple Watch and began limiting third-party access to new and improved APIs for smartwatch functionality. For example, Apple prevents third-party smartwatches from accessing APIs related to more advanced Actionable Notifications, so iPhone users cannot respond to notifications using a third-party smartwatch. Instead, Apple provides third-party smartwatches access to more limited APIs that do not allow users to respond to a message, accept a calendar invite, or take other actions available on Apple Watch.

110. A reliable Bluetooth connection is essential for a smartwatch to connect wirelessly with a smartphone, and thereby function as a companion to the user's smartphone and unlock its

[26] *See id.* at ¶ 99.
[27] *See id.* at ¶ 101.

full functionality. But Apple prohibits third-party smartwatch developers from maintaining a connection even if a user accidentally turns off Bluetooth in the iPhone's control center. Apple gives its own Apple Watch that functionality, however, because Apple recognizes that users frequently disable Bluetooth on their iPhone without realizing that doing so disconnects their watch. As a result, iPhone users have a worse experience when they try to use a third-party smartwatch with their iPhone. Apple also requires users to turn on "Background App Refresh" and disable the battery-saving "Low Power Mode" in their iPhone settings for third-party smartwatches to remain consistently connected to their companion app, which is necessary to allow a user's iPhone and their smartwatch to update and share data about the weather or exercise tracking, even though Apple does not impose similar requirements for Apple Watch.

111. Cellular-enabled smartwatches incorporate the ability to connect directly to a cellular network, allowing users to make calls, send messages, and download data even if their smartwatch is not paired to a smartphone. Cellular-enabled smartwatches are popular with consumers, making up approximately 20 percent of Apple Watch sales. Apple Watch users can use the same phone number for their smartphone and smartwatch when connected to the cellular network. As a result, messages are delivered to both the user's smartphone and smartwatch, providing an integrated messaging experience. Although it is technologically feasible for Apple to allow an iPhone user with a third-party smartwatch to do the same, Apple instead requires these users to disable Apple's iMessage service on the iPhone in order to use the same phone number for both devices. This is a non-starter for most iPhone users. In practice, iPhone users with a third-party smartwatch must maintain separate phone numbers for the two devices, worsening their user experience, and may miss out on receiving messages sent to their primary iPhone number.

3. Digital Wallets: Apple restricts cross-platform digital wallets on the iPhone, reinforcing barriers to consumers switching to rival smartphones.

112. Apple recognizes that using a digital wallet will eventually become "something people do every day of their lives." But Apple has used its control over app creation, including its technical and contractual control over API access, to effectively block third-party developers from

creating digital wallets on the iPhone with tap-to-pay functionality, which is an important feature of a digital wallet for smartphones. As a result, Apple maintains complete control over how users make tap-to-pay payments with their iPhone. Apple also deprives users of the benefits and innovations third-party wallets would provide so that it can protect "Apple's most important and successful business, iPhone."[28]

113. Digital wallets are apps that allow a user to store and use passes and credentials, including credit cards, personal identification, movie tickets, and car keys, in a single app. For example, digital wallets allow users to make in-person payments by tapping their device on a payment terminal. Digital wallets can also be used for transactions in mobile apps and mobile websites.

114. Absent Apple's conduct, cross-platform digital wallets could also be used to manage and pay for subscriptions and in-app purchases.

115. Apple Wallet is Apple's proprietary digital wallet on the iPhone. Apple Wallet incorporates Apple's proprietary payment system Apple Pay, which processes digital payments on the web, in apps, and at merchant points of sale.

116. Today, Apple Wallet offers users a way to make these payments using their iPhone. But Apple envisions that Apple Wallet will ultimately supplant multiple functions of physical wallets to become a single app for shopping, digital keys, transit, identification, travel, entertainment, and more. As users rely on Apple Wallet for payments and beyond, it "drive[s] more sales of iPhone and increase[s] stickiness to the Apple ecosystem" because Apple Wallet is only available on the iPhone.[29] Thus, switching to a different smartphone requires leaving behind the familiarity of an everyday app, setting up a new digital wallet, and potentially losing access to certain credentials and personal data stored in Apple Wallet.

117. Cross-platform digital wallets would offer an easier, more seamless, and potentially more secure way for users to switch from the iPhone to another smartphone. For example, if third-

[28] *See id.* at ¶ 104.
[29] *See id.* at ¶ 108.

party developers could create cross-platform wallets, users transitioning away from the iPhone could continue to use the same wallet, with the same cards, IDs, payment histories, peer-to-peer payment contacts, and other information, making it easier to switch smartphones. And because many users already use apps created by their preferred financial institutions, if these financial institutions offered digital wallets or could at least offer their services through third-party digital wallets, then users would have access to new apps and technologies without needing to share their private financial data with additional third parties, including Apple. In the short term, these improved features would make the iPhone more attractive to users and profitable for Apple.

118. Accordingly, the absence of cross-platform digital wallets with tap-to-pay capability on the iPhone makes it harder for iPhone users to purchase a different smartphone.

119. The most important function for attracting users to a digital wallet for smartphones is the ability to offer tap-to-pay, i.e., the ability to make in-person payments by tapping your smartphone on a payment terminal. Apple uses its control over app creation and API access to selectively prohibit developers from accessing the near-field communication (NFC) hardware needed to provide tap-to-pay through a digital wallet app.

120. Apple Wallet is the only app on the iPhone that can use NFC to facilitate tap-to-pay. While Apple actively encourages banks, merchants, and other parties to participate in Apple Wallet, Apple simultaneously exerts its smartphone monopoly to block these same partners from developing better payment products and services for iPhone users.

121. Apple also uses its smartphone monopoly to extract payments from banks, which need to access customers that use digital wallets on iPhones. Since Apple first launched Apple Pay—long before it achieved meaningful adoption—Apple has charged issuing banks 15 basis points (0.15 percent) for each credit card transaction mediated by Apple Pay. Payment apps from Samsung and Google are free to issuing banks. Apple's fees are a significant expense for issuing banks and cut into funding for features and benefits that banks might otherwise offer smartphone users. The volume of impacted transactions is large and growing. A U.S. Consumer Financial Protection Bureau report estimates that Apple Pay facilitated nearly $200 billion in transactions in

the United States in 2022. And the report goes on to explain that "analysts estimate that the value of digital wallet tap-to-pay transactions will grow by over 150 percent by 2028."[30]

122. Multiple app developers have sought direct NFC access for their payment or wallet apps. Yet Apple prohibits these developers from incorporating tap-to-pay functionality in their apps for fear that doing so would "be one way to disable [A]pple [P]ay trivially," leading to the "proliferation of other payment apps" that might operate cross-platform and ultimately undermine Apple's smartphone monopoly.[31]

123. There is no technical limitation on providing NFC access to developers seeking to offer third-party wallets. For example, Apple allows merchants to use the iPhone's NFC antenna to accept tap-to-pay payments from consumers. Apple also acknowledges it is technically feasible to enable an iPhone user to set another app (e.g., a bank's app) as the default payment app, and Apple has announced its intention to allow this functionality in Europe after drawing antitrust scrutiny there.

124. Apple further impedes the adoption of digital wallets by restricting others from offering the same ability to authenticate digital payment options on online checkout pages. By limiting the ability of third-party wallets to provide a simple, fast, and comprehensive solution to online purchasing, Apple further undermines the viability of such wallets.

125. Apple also blocks other digital wallets from serving as an alternative to Apple's in-app payment (IAP). This prevents these wallets from increasing their attractiveness and improving the overall user experience on the iPhone by offering consumer experiences that may include use of rewards points in purchasing, digital receipts, returns, loyalty programs, and digital coupons for purchases of relevant subscriptions and digital goods. Apple even prohibits developers on its App Store from notifying users in the developer's app that cheaper prices for services are available using alternative digital wallets or direct payments.

[30] *See id.* at ¶ 113.
[31] *See id.* at ¶ 114.

126. Apple's conduct reflects its knowing degradation of the experience of its own users by blocking them from accessing wallets that would have better or different features. In so doing, Apple cements reliance on the iPhone and also imposes fees on a large and critical slice of all digital wallet NFC transactions, which the U.S. Consumer Financial Protection Bureau estimates will grow to $451 billion by 2028.

C. Apple Uses A Similar Playbook To Maintain Its Monopoly Through Many Other Products and Services

127. The exclusionary and anticompetitive acts described above are part of Apple's ongoing course of conduct to build and maintain its smartphone monopoly. They are hardly exhaustive. Rather, they exemplify the innovation Apple has stifled and Apple's overall strategy of using its power over app distribution and app creation to selectively block threatening innovations.

128. Apple has deployed a similar playbook for a much broader range of third-party apps and services as well, many of which present technologies that function as middleware, facilitate switching, reduce the need for expensive hardware, or disintermediate Apple's iPhone by enabling the development of cross-platform technologies. For instance, Apple has undermined third-party location trackable devices that fully function across platforms. Apple has impaired third-party, cross-platform video communications apps while steering users to its own video communication app, FaceTime. Apple has limited the capabilities of third-party iOS web browsers, including by requiring that they use Apple's browser engine, WebKit. Protocols that Apple has placed around new "eSIM" technology may introduce additional frictions for any user who seeks to transition from an iPhone to a different phone while maintaining the same phone number. Apple has impeded cross-platform cloud storage apps in order to steer iPhone users into iCloud, making data transfer between different devices more difficult. Apple uses restrictions in sales channels to impede the sale and distribution of rival smartphones. And Apple has worsened its users' experience by making it difficult for iPhone users to use superior voice and AI assistants and steering users to use Siri as a voice assistant.

129. Ultimately, the strategies Apple has employed to date are not the only ones Apple can use to achieve its anticompetitive and lucrative ends. As technology evolves, Apple continues to evolve and shift its anticompetitive behavior to protect its monopoly power. For example, in recent years, Apple has increasingly moved into offering its own subscription services, including news, games, video, music, cloud storage, and fitness subscriptions that could be used to keep users tethered to the platform. These subscription services and other ancillary fees are a significant part of Apple's net revenue and add substantially to a user's cost of an iPhone. These subscriptions services can also increase switching costs among iPhone users. If an Apple user can only access their subscription service on an iPhone, they may experience significant costs, time, lost content, and other frictions if they attempt to switch to a non-Apple smartphone or subscription service.

130. These subscription services can also increase Apple's power over content creators and newspapers, among others, by exerting control over how audiences access their work, decreasing traffic to their websites and apps, and positioning Apple as the middleman or tollbooth operator in the relationship between creators and users. In so doing, Apple takes on outsize importance and control in the creative economy, which may diminish incentives to fund, make, and distribute artistic expression.

131. In addition, when one road is closed to Apple, Apple has demonstrated its ability to find new roads to the same or worse ends. For example, Apple was recently ordered to stop blocking link-outs by third parties to their websites where users could buy the third party's product cheaper. In response, Apple reportedly allowed link-outs to websites but now charges for purchases made on the web even if they are not an immediate result of a click from a link in a native iPhone app.

132. Apple has also attempted to undermine cross-platform technologies like digital car keys in ways that benefit Apple but harm consumers. For example, Apple has required developers to add digital keys developed for their own apps to Apple Wallet as well. The default status of Apple Wallet steers users to the Apple Wallet rather than allowing third parties to present digital car keys only in their own cross-platform app, increasing dependence on Apple and the iPhone

whenever they use their car. At the same time, it decreases the incentives of automakers to innovate because automakers are forced to share data with Apple and prevented from differentiating themselves as they could absent Apple's conduct.

133. Apple's threatened dominance over the automotive industry goes well beyond the Apple Wallet and Apple's demands on car makers to allow innovative products and services on the iPhone. Apple's smartphone dominance extends to CarPlay, an Apple infotainment system that enables a car's central display to serve as a display for the iPhone and enables the driver to use the iPhone to control maps and entertainment in the car. Like the smartphone market, infotainment systems are increasingly considered must-have capabilities in newer vehicles. After leveraging its smartphone dominance to car infotainment systems, Apple has told automakers that the next generation of Apple CarPlay will take over all of the screens, sensors, and gauges in a car, forcing users to experience driving as an iPhone-centric experience if they want to use any of the features provided by CarPlay. Here too, Apple leverages its iPhone user base to exert more power over its trading partners, including American carmakers, in future innovation. By applying the same playbook of restrictions to CarPlay, Apple further locks-in the power of the iPhone by preventing the development of other disintermediating technologies that interoperate with the phone but reside off device.

VIII. ANTICOMPETITIVE EFFECTS

A. Apple's Conduct Harms The Competitive Process

134. As described above, Apple protects its monopoly power in smartphones by using its control over app distribution and app creation to suppress or delay apps, innovations, and technologies that would reduce user switching costs or simply allow users to discover, purchase, and use their own apps and content without having to rely on Apple. As a result, Apple faces less competition from rival smartphones and less competitive pressure from innovative, cross-platform technologies not because Apple makes its own products better but because it makes other products worse. With the benefit of less competition, Apple extracts extraordinary profits and regulates

innovation to serve its interests. This leaves all smartphone users worse off, with fewer choices, higher prices and fees, lower quality smartphones, apps, and accessories, and less innovation from Apple and others. Left unchallenged, Apple will continue to use and strengthen its smartphone monopoly to dictate how companies can create and distribute apps in the future so that they cannot threaten Apple's smartphone monopolies.

135. Apple's conduct has resulted in less choice for smartphone users. Today, only two companies (Google and Samsung) remain as meaningful competitors to Apple in the premium smartphone market.

136. Even when users consider these alternatives, Apple's conduct has increased the technical, behavioral, monetary, and other costs of switching from an iPhone to an alternative smartphone. This undermines competition and entrenches Apple's monopoly power. For example, according to user surveys, one of the biggest reasons iPhone users do not switch to rival smartphones today is to avoid the problems Apple has created for cross-platform messaging. Likewise, Apple exercised its control over app distribution and app creation to impede the development and growth of super apps, depriving users of technology that would have facilitated switching by decreasing user's dependence on Apple and the iPhone. Apple took a similar approach to cloud streaming apps, delaying or suppressing technology that would have made it easier for users to switch to cheaper smartphones. Apple also used its control over app creation, including its control over critical APIs, to impose technical and contractual restrictions on messaging apps, third-party smartwatches, and digital wallets, undermining cross-platform technologies that would have helped users overcome switching costs and friction and ultimately increased smartphone competition.

137. Apple's conduct has delayed or suppressed the emergence of cross-platform technologies that would put competitive pressure on Apple's ability to extract extraordinary profits from users and developers. For example, if developers could distribute their programs through super apps or cloud streaming apps, rather than the App Store, it would put competitive pressure on Apple's ability to control app distribution and app creation as well as the taxes Apple imposes

on developers who want to distribute apps to iPhone users. Similarly, third-party digital wallets, or other apps with tap-to-pay functionality, would benefit users and developers by putting more competitive pressure on Apple as well. For example, digital wallets could eventually provide developers an alternative way to process payments and manage customer relationships, forcing Apple to compete more aggressively by lowering fees and improving quality, which would ultimately benefit users. Instead, Apple continues to exert its power over customers and financial institutions when users pay for something with their phone—in the App Store, in an app, or increasingly in the physical world with tap-to-pay.

138. Apple's conduct has harmed users in other ways. For example, third-party digital wallets could provide smartphone users better rewards, e.g., cash back, as well as a more private, secure payment experience from a user's preferred financial institution rather than being forced to go through Apple. But these tap-to-pay digital wallet products and services do not exist today because of Apple.

139. Apple's conduct has made its own products worse, sacrificing the short-term profits Apple could earn from improving the iPhone in order to preserve the long-term value of maintaining its monopoly. In a competitive market, Apple would compete aggressively to support the development of popular apps and accessories for iPhone users, which would in turn make iPhones more attractive to users and more valuable. But Apple takes steps to delay or suppress cross-platform technologies that it recognizes would be popular with users, such as super apps and cloud streaming apps, because of the threat they pose to Apple's smartphone monopolies. As a result, several developers have abandoned plans to develop super apps and cloud-based gaming apps even after making substantial investments in bringing them to market. Apple's conduct may have also slowed the development of innovative, high-compute apps related to education, artificial intelligence, and productivity as well. Apple has also impeded innovation by third-party smartwatches such that manufacturers have limited the functionality of their smartwatches for iPhone users, suspended support for iPhone compatibility because of Apple's restrictions, or canceled development of cross-platform smartwatches altogether. At least one company's

canceled smartwatch formed part of its overall wearables strategy, including future development of virtual-reality technology. Similarly, Apple degrades third-party messaging apps, even though it makes cross-platform messaging less private and less secure for iPhone users, because doing so raises switching costs.

140. Apple's conduct has harmed other smartphone users, too. Because of the resources and risks required to maintain different features across different smartphones, many potential super app, mini program, and other developers do not implement features prohibited by Apple even on other smartphones. For example, prospective digital wallet providers, including U.S. banks, have abandoned the development of digital-wallet apps for either Apple or other smartphones. Another company decided not to offer users an innovative digital car key in part because Apple required that company to add any features related to the key into Apple Wallet rather than allowing that company to put its key solely in its own app. Other developers have shrunk, shuttered, or abandoned plans to launch super apps, cloud-streamed gaming apps, smartwatches, and other apps. As a result, all smartphone users enjoy lower quality smartphones, less innovation, less quality-adjusted output, and less choice.

141. Apple's documents and conduct show that Apple is motivated by the anticompetitive purpose of building or maintaining monopoly power in the relevant markets. For example, Apple sacrificed substantial revenues it could have earned from super apps, mini programs, cloud streaming apps, and other third-party apps and accessories. In particular, mobile gaming already accounts for a large and growing portion of Apple's revenue. Popular cloud streamed gaming apps would offer iPhone users access to popular services (including games) and in turn generate significant revenue for Apple through subscriptions and in-app purchases. Instead, Apple preferred the long-term benefit of reduced smartphone competition to the revenue it would generate from cloud gaming, super apps, and mini programs or the quality (and consumer demand) increase that would flow from this innovation. Apple has also used its control over app distribution

and app creation to selectively undermine cross-platform technologies, not because this helps protect users but because it helps protect Apple.[32]

142. The harms to smartphone competition caused by Apple's conduct are amplified by Apple's decision to grant itself exclusive distribution rights to iPhone users through the Apple App Store. If Apple allowed users to access apps in other ways, users could choose an app store that did not restrict super apps or mini programs, even if Apple ran its App Store the same way it does today. Apple does not allow that choice, however, because if it did developers could write their programs for any smartphone rather than specifically for iOS, just as internet browsers and Apple's QuickTime allowed developers to write programs that worked on a variety of operating systems not just Windows. That would lower users' switching costs and reduce users' and developers' dependence on Apple and the iPhone.

143. Apple's smartphone monopoly gives it many levers to maintain its power even in the face of interventions focused on eliminating or disciplining specific anticompetitive practices. This is because Apple's iPhone monopoly, secured by its anticompetitive conduct, grants it the power to set the rules by which most smartphone users buy digital and hardware products, and by which developers are allowed to sell these same products to users. If Apple is forced to change some of these rules, it has the power to adopt new rules, restrictions, or features that reinforce Apple's monopoly and harm competition in other ways. For example, Apple has stated plans to adopt RCS due to market and international regulatory pressure. But Apple continues to contractually restrict third parties from accessing other APIs and features that would enable cross platform messaging apps. In another instance, Apple was enjoined from enforcing certain anti-steering provisions in its agreements with developers. In response, Apple simply created a different set of onerous restrictions on app developers to achieve a similar result. In other cases, Apple has used its control over app distribution to force companies to comply with Apple's policies that may contradict local laws by delaying the review of the offending companies' apps.

[32] *See id.* at ¶ 133.

B. Apple Has Every Incentive To Use Its Monopoly Playbook In The Future

144. Apple's conduct does not just impact the past and present but poses significant risk to the development of new innovations. Apple may use its smartphone monopoly playbook to acquire or maintain power over next-frontier devices and technologies. As Apple grows its dominance, Apple may continue delaying or stifling the innovations of cross-platform companies, in order to lock users into Apple devices.

IX. PRIVACY, SECURITY, AND OTHER ALLEGED COUNTERVAILING FACTORS DO NOT JUSTIFY APPLE'S ANTICOMPETITIVE CONDUCT

145. There are no valid, procompetitive benefits of Apple's exclusionary conduct that would outweigh its anticompetitive effects. Apple's conduct has not resulted in lower prices, higher quality-adjusted output, improved innovation, or a better user experience for smartphone users.

146. Apple markets itself on the basis of privacy and security to differentiate itself from what competition is left in the smartphone market. But this does not justify Apple's monopolistic and anticompetitive conduct. Apple imposes contractual restraints on app creation and distribution, imposes hefty fees on many types of smartphone interactions, and conditionally restricts API access on its smartphone platform simply because it can. There are limited if any competitive constraints on this conduct. As a point of comparison, Apple does not engage in such conduct on its Mac laptops and computers. It gives developers the freedom to distribute software directly to consumers on Mac without going through an Apple-controlled app store and without paying Apple app store fees. This still provides a safe and secure experience for Mac users, demonstrating that Apple's control over app distribution and creation on the iPhone is substantially more restrictive than necessary to protect user privacy and security.

147. In fact, many alternative technologies that Apple's conduct suppresses would enhance user security and privacy. For example, Apple's conduct targeting digital wallets forces users to share information with Apple even if they would prefer to share that information solely with their bank, medical provider, or other trusted third party. In particular, when an iPhone user

provisions a credit or debit card into Apple Wallet, Apple intervenes in a process that could otherwise occur directly between the user and card issuer introducing an additional point of failure for privacy and security. Likewise, super apps or alternative app stores could offer users and their families a more curated selection of apps that better protect user privacy and security. Indeed, Apple allows enterprise and public sector customers to offer more curated app stores on employee iPhones because it better protects privacy and security.

148. Apple is also willing to make the iPhone less secure and less private if that helps maintain its monopoly power. For example, text messages sent from iPhones to Android phones are unencrypted as a result of Apple's conduct. If Apple wanted to, Apple could allow iPhone users to send encrypted messages to Android users while still using iMessage on their iPhone, which would instantly improve the privacy and security of iPhone and other smartphone users.

149. Similarly, Apple is willing to sacrifice user privacy and security in other ways so long as doing so benefits Apple. For example, Apple allows developers to distribute apps through its App Store that collect vast amounts of personal and sensitive data about users—including children—at the expense of its users' privacy and security. Apple also enters agreements to share in the revenue generated from advertising that relies on harvesting users' personal data. For example, Apple accepts massive payments from Google to set its search engine as the default in the Safari web browser even though Apple recognizes that other search engines better protect user privacy.

150. Finally, Apple selectively enforces its rules and contractual restrictions for app distribution and app creation. For example, when it benefits Apple to do so, Apple permits developers to introduce mini programs, stream content from the cloud, use virtual currency, and receive special permissions or access APIs not automatically available to everyone.

151. Ultimately, Apple chooses to make the iPhone private and secure when doing so benefits Apple; Apple chooses alternative courses when those courses help Apple protect its monopoly power. Apple's conduct underscores the pretextual nature of any claim that Apple's conduct is justified by protecting user privacy or security.

X. THE SMARTPHONE INDUSTRY

A. Background

152. Mobile phones are portable devices that enable communications over radio frequencies instead of telephone landlines. These signals are transmitted by equipment covering distinct geographic areas, or "cells," which is why mobile phones were called cell phones. The first commercial cell phones became available in the 1980s. Since then, improvements in both cell phone components and wireless technology have made it possible to transfer large volumes of data around the globe in a short period. As a result, mobile phones began to offer a wider array of features and the adoption of mobile phones dramatically increased. Today, nearly all American adults own a mobile phone.

153. Smartphones combine the functionality of a traditional mobile phone with advanced hardware and software components. Smartphones not only make phone calls, but allow users to listen to music, send text messages, take pictures, play games, access software for work, manage their finances, and browse the internet. Consumers choose between smartphones based, in part, on their functionality. Today, smartphone functionality is driven in large part, though not exclusively, by a combination of hardware and software components. Thus, in a competitive market, smartphone manufacturers would compete and innovate to provide the best functionality.

154. Although consumers could replace some smartphone functionality with separate devices such as by always carrying a camera and laptop, they generally prefer to access this combination of functionality as part of a single device. Thus, phones with some but not all of these features are not reasonable substitutes for smartphones. For example, a Canon or Nikon camera is not a substitute for an Apple or Samsung smartphone notwithstanding that both these products are capable of taking digital pictures.

B. Smartphone Hardware

155. A smartphone's hardware includes the frame and screen. Higher performing smartphones are typically constructed from better materials like glass and metal instead of plastic,

manufactured to higher standards that make them more durable (e.g., water and dust proof), and have higher quality displays.

156. A smartphone's hardware also includes the semiconductor chipsets that run the smartphone: central processing of software instructions, graphics, video, display, memory, data storage, and connection to wireless networks. Chipsets that offer superior performance—faster processing and network connections, better graphics, more storage—are costly.

157. Smartphone hardware includes other important components like cameras, and position and motion sensors.

a. Smartphones also contain several types of antennas that allow the phone to communicate with other smartphones, accessories, or other devices using standard communication protocols such as Wi-Fi, Bluetooth, and Near-Field Communications (NFC).

b. Wi-Fi is a wireless networking technology that uses radio waves to provide wireless high-speed Internet access through mobile devices, computers printers, and other equipment. "Wi-Fi," in particular, refers to IEEE 802.11 standards that define the protocols that enable communications with current Wi-Fi-enabled wireless devices such as wireless routers and access points.

c. Bluetooth is a wireless standard that allows smartphones to use shortwave radios to communicate with accessories like headphones and smartwatches. An industrywide Bluetooth standard specifies technological requirements to ensure that all Bluetooth devices can recognize and interact with each other. A typical Bluetooth signal has a range of about 30 feet.

d. Near Field Communication (NFC) allows smartphones to interact with NFC-enabled devices like a credit card terminal at a coffee shop. NFC relies on shortrange wireless technologies, including radio signals, to communicate and share information. To operate, two NFC-enabled devices must typically be within four centimeters or less of one another.

158. Three device manufacturers, Apple, Samsung, and Google, account for approximately 94 percent of all smartphones by revenue in the United States. Apple and Samsung alone account for approximately 90 percent of all smartphone revenues in the United States.[33]

159. Cloud-based technologies are run using hardware and software in remote computing centers ("the cloud") rather than by hardware and software on a smartphone. The user experiences the technology on the phone but the complex computing that generates the rich experience and that executes the user's commands happens in the cloud. Thus, cloud apps can deliver rich experiences on smartphones with less capable hardware than iPhones currently contain.

C. Smartphone Operating Systems, Applications, And Other Software

160. In addition to hardware, smartphones include various software components that make a smartphone more attractive to users.

161. The most important software component is a smartphone's operating system, the foundational software that manages both the hardware and other software programs on the device. All iPhones are preloaded with Apple's proprietary, exclusive iPhone operating system called iOS. The only other significant mobile operating system in the United States is Google's Android, which works with smartphones manufactured by Samsung, whose U.S. headquarters is located in this district, Google, Motorola, and smaller players. Software applications, known as "apps," are programs that perform specific tasks at the smartphone user's request, such as sending messages, playing music, or web browsing. Apps depend on a smartphone's operating system to function. For example, to make a video call, apps must communicate with a smartphone's operating system to access various hardware components on the phone, such as the camera, microphone, and speaker. Apps communicate with a smartphone's operating system through application programming interfaces (APIs).

[33] *See id.* at ¶ 153.

162. Apps that work with a particular smartphone operating system are called native apps. Thus, Apple's native iOS apps work with iPhone and native Android apps work with Android smartphones.

163. Most app developers do not view Android as a substitute for iOS or iOS as a substitute for Android. The overwhelming majority of users choose a single phone and do not "multi-home" by carrying an Android phone and the iPhone at the same time. Thus, a developer cannot reach iPhone users on Android or Android users on iPhones. Due to the lack of user multi-homing, most developers create native apps for both iOS and Android to reach the greatest number of smartphone users. For example, a food delivery or ride-sharing app cannot develop an app just for Android phones or just for the iPhone. Developing for both platforms is often necessary for developers to reach the scale they need to be viable.

164. It is also important to develop apps for the iPhone and other smartphone platforms because most apps are increasingly "social" in nature and require users on one platform to reach users on the other. For example, the developer of a dating app must enable its users on iPhones to meet users on Android and vice-versa. A money-sharing app must enable users on Android devices to send money to users on iPhones and vice versa.

165. App developers typically provide a similar user experience for native apps on iPhones and Android smartphones to minimize the resources and risks of maintaining different features across different smartphones. Even so, developers must program native apps to work with a specific operating system and so they do not always interoperate or synchronize across different operating systems.

166. Middleware is software that provides similar APIs and functionality across a diverse set of operating systems and devices. This allows developers to create cross-platform applications without having to write separate code for individual operating systems or devices because developers can rely on the APIs exposed by the middleware rather than APIs that only work on specific operating systems or devices. Apple has long understood how middleware can help promote competition and its myriad benefits, including increased innovation and output, by

increasing scale and interoperability. As Apple's then-Senior Vice President of Software Engineering testified during United States v. Microsoft: "Because we have created QuickTime for both Windows and Macintosh computers, developers can write a single version of a content product that will run on both Macintosh and Windows, without the additional expense of 'porting' the product to different operating systems." In the context of smartphones, examples of middleware include internet browsers, internet or cloud-based apps, super apps, and smartwatches, among other products and services. While not meeting the technical definition of middleware, certain other products and services may nonetheless have the same economic impact as middleware, such as eliminating the added expense of porting a product or experience across hardware or operating systems. For the purposes of this complaint middleware refers to both technical middleware and to products and services that, while not technically middleware, have the same economic effect.

D. Relevant Markets

167. All smartphones compete against each other in a broad relevant market. But industry participants, including Apple, assess competition among smartphones in narrower markets that are best understood as submarkets of the larger all-smartphone market. Because Apple chooses not to compete to sell new smartphones in the entry-level tier, the most relevant market to assess its conduct is a narrower submarket that excludes this tier. Regardless of how the market is drawn, however, Apple's conduct is unlawful.

1. Smartphones are a relevant product market.

168. Smartphones are a relevant product market. Smartphones are distinct from phones that offer less capable hardware and software options than smartphones. These other phones, sometimes called "feature phones," may offer basic web browsing in addition to calling and messaging options, but do not offer the breadth of access to the internet or third-party apps as smartphones. Similarly, these phones often have lower-quality hardware, such as poorer displays,

less capable cameras, and rely on physical keyboards instead of smartphone touch screens. Thus, these phones are not reasonable substitutes for smartphones.

169. Smartphones are also distinct from other portable devices, such as tablets, smartwatches, and laptop computers. These devices lack the combination of function, size, and portability that consumers rely on in a smartphone, even if they offer some similar capabilities. Thus, none of these other products are reasonable substitutes for smartphones.

170. Apple, other participants in the market, and the public recognize that smartphones are distinct from feature phones and other portable devices.

171. Competition from feature phones, or other alternatives, is not sufficient to prevent Apple from exercising monopoly power in the smartphone market.

2. The United States is a relevant geographic market for smartphones.

172. The United States is a relevant geographic market for the sale of smartphones. A smartphone purchased abroad for use in the United States might be incompatible with the consumer's domestic carrier, may not have the necessary radio technology to take advantage of the carrier's highest speed connections, the carrier might not be able to offer support during setup or subsequently, or the phone's warranty may be invalid.

173. Potential new smartphone entrants to the U.S. market must also comply with telecommunications regulations and satisfy other legal requirements. No extensive regulatory framework governs how Apple operates its platform with respect to developers, but there are a number of regulatory requirements that must be met in order to enter the smartphone market. For example, some smartphone makers are effectively barred from offering their smartphones to U.S. consumers.

174. Consumers in the United States could not avoid or defeat an increase in the price of smartphones by purchasing and importing smartphones from abroad. This allows Apple to set prices for the same smartphone in the United States separately from those in other countries. For example, Apple lowered the price of the iPhone 11 in China relative to the United States because Apple faced greater competition in China. This additional competition arises in part because a

popular super app put competitive pressure on Apple and made it easier for users to switch from an iPhone to a rival smartphone. As a result, Apple is unable to command the same prices for the iPhone in China than they do in the United States due to less competition.

E. Apple Has Monopoly Power In The Smartphone Market

175. Apple has monopoly power in the smartphone market because it has the power to control prices or exclude competition in each of them. Apple also enjoys substantial and durable market shares in these markets. Moreover, Apple's market shares likely underestimate Apple's power because they are protected by significant barriers to entry, network effects, and switching costs. Apple recognizes and exploits these barriers to entry, network effects, and switching costs to protect itself from competition from rival platforms and innovations, products, and services that may diminish consumer reliance on the iPhone. Apple's power will likely increase over time.

176. In the U.S. market for smartphones, where Apple views itself as competing, Apple's market share is 65%.[34] These estimates likely understate Apple's market share today. For example, Apple's share among key demographics, including younger audiences and higher-income households, is even larger. Similarly, even if consumers choose one phone over another, the vast majority of developers consider iPhones and Android devices as complements because developers must build apps that run on both platforms due to the lack of user multi-homing. In effect, the lack of multi-homing among users necessitates multi-homing among developers. This market reality increases the power that Apple is able to exercise over developers that seek to reach users on smartphones.

177. Apple's high market shares are durable. Over the last decade, Apple increased its share of smartphones sold in the United States most years. Through the same period, Apple collected more than half the revenue for all smartphones sold in the United States.

178. Apple's monopoly power in the relevant markets is protected by substantial barriers to entry and expansion. For example, since fewer than ten percent of smartphone purchasers in the

[34] *See id.* at ¶ 181.

United States are buying their first smartphone, there are fewer new customers available for Apple's rivals. Instead, rivals must encourage existing iPhone users to switch from using an iPhone to using another smartphone when they replace or upgrade their phone. As a result, switching costs—many created or exacerbated by Apple—impose substantial barriers to entry and expansion for rival smartphones. This barrier is increasingly impenetrable. Nearly 90 percent of iPhone owners in the United States replace their iPhone with another iPhone. At least one U.S. carrier estimates that as high as 98 percent of iPhone users on its network replace or upgrade their iPhone in a given quarter by buying another iPhone.[35] The increased switching costs that consumers experience because of Apple's conduct underpins these exceedingly high retention rates.

179. Apple's monopoly power in the relevant markets is protected by other barriers to entry, expansion, or repositioning as well. For example, introducing a new smartphone requires considerable investments in acquiring expensive and scarce components such as mobile chips and specialized glass for screens. Other significant barriers to entry include product design, software development, regulatory approval, manufacturing, marketing, and customer service. As explained above, rival smartphones must also overcome the substantial network effects generated by interactions between users, developers, and others who interact with the iPhone.

180. Apple's iPhone platform is protected by several additional barriers to entry and expansion, including strong network and scale effects and high switching costs and frictions. For example, if an iPhone user wants to buy an Android smartphone, they are likely to face significant financial, technological, and behavioral obstacles to switching. The user may need to re-learn how to operate their smartphone using a new interface, transfer large amounts of data (e.g., contacts), purchase new apps, or transfer or buy new subscriptions and accessories. These switching costs and frictions are even higher when software applications, APIs, and other functionality do not help the different devices and operating systems communicate and interoperate. These switching costs

[35] *See id.* at ¶ 183.

and frictions increase the "stickiness" of the iPhone, making users more beholden to the smartphone manufacturer and platform operator.

181. Many prominent, well-financed companies have tried and failed to successfully enter the relevant markets because of these entry barriers. Past failures include Amazon (which released its Fire mobile phone in 2014 but could not profitably sustain its business and exited the following year); Microsoft (which discontinued its mobile business in 2017); HTC (which exited the market by selling its smartphone business to Google in September 2017); and LG (which exited the smartphone market in 2021). Today, only Samsung and Google remain as meaningful competitors in the U.S. smartphone market. Barriers are so high that Google is a distant third to Apple and Samsung despite the fact that Google controls development of the Android operating system.

182. Apple's monopoly power is separately demonstrated by direct indicia. For example, Apple can and does profitably forego innovation without fear of losing customers to competitors. For example, Apple's vice president of iPhone marketing explained in February 2020: "In looking at it with hindsight, I think going forward we need to set a stake in the ground for what features we think are 'good enough' for the consumer. I would argue were [sic] already doing *more* than what would have been good enough." After identifying old features that "would have been good enough today if we hadn't introduced [updated features] already," she explained, "anything new and especially expensive needs to be rigorously challenged before it's allowed into the consumer phone."[36]

183. Apple's profits and profit margins, for nearly every aspect of the iPhone, are further evidence of Apple's monopoly power. For example, Apple's per-unit smartphone profit margins are far more than its next most profitable rival. Apple charges carriers considerably more than its rivals to buy and resell its smartphones to the public and employs contract clauses that may impede the ability of carriers to promote rival smartphones, a harmful exercise of monopoly power that is

[36] *See id.* at ¶ 187.

hidden to most consumers. Apple extracts fees—as much as 30 percent when users purchase apps or make in-app payments. Apple also extracts a 0.15 percent commission on credit card transactions through its digital wallet, while none of its smartphone competitors with digital wallets charge any fee. Apple predicts that it will collect nearly $1 billion in worldwide revenue on Apple Pay fees by 2025. A recent report by the U.S. Consumer Financial Protection Bureau suggest these revenues will only increase, as "analysts expect the value of digital wallet tap-to-pay transactions will grow by over 150 percent by 2028."[37]

184. Apple increasingly charges developers additional fees to promote their apps in the App Store as well. In fact, this is one of the fastest-growing parts of Apple's services business, with revenue "increasing by more than a third to $4.4B in FY 2022."

185. These indicia of Apple's monopoly power are direct evidence of its monopoly power in the relevant markets.

XI. JURISDICTION, VENUE, AND COMMERCE

186. This Court has subject matter jurisdiction over this action under 28 U.S.C. § 1331 because Plaintiff alleges violations of federal law, namely, the Sherman Act.

187. This Court has personal jurisdiction over Defendant Apple, which is headquartered in this District. Apple has engaged in sufficient minimum contacts with the United States, this judicial district, and this State, and it has intentionally availed itself of the laws of the United States and this State by conducting a substantial amount of business throughout the State.

188. This judicial district is a proper venue because Apple resides in this District and transacts affairs in this District. A substantial part of the events giving rise to Plaintiff's claims occurred in this District.

189. Apple engages in, and its activities substantially affect, interstate trade and commerce. Apple provides a range of products and services that are marketed, distributed, and offered to consumers throughout the United States, across state lines, and internationally.

[37] *See id.* at ¶ 188.

XII. CLASS ALLEGATIONS

190. Plaintiff brings this proposed class action for damages and injunctive relief pursuant to Fed. R. Civ. P. 23(b)(1), (2), and (3).

191. Plaintiff brings this action on their own behalf and on behalf of the following classes:

> **Damages Class**: All persons and entities who purchased a new iPhone from a telecommunications carrier or another retail outlet other than an Apple outlet in the following states in territories: Alaska, Arizona, Arkansas, California, Connecticut, District of Columbia, Florida, Hawaii, Illinois, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Oregon, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, West Virginia, and Wisconsin
>
> **Nationwide Class**: All persons and entities who purchased a new iPhone from a telecommunications carrier or another retail outlet in the United States other than an Apple outlet.

192. Excluded from the proposed classes are Defendant; Defendant's affiliates and subsidiaries; Defendant's current or former employees, officers, directors, agents, and representatives; the district judge or magistrate judge to whom this case is assigned, as well as those judges' immediate family members; counsel to Plaintiff and the proposed classes, as well as counsel's employees; and all governmental entities.

193. **Numerosity**: The exact number of the members of the proposed classes is unknown and is not available to the Plaintiff at this time, but upon information and belief, the classes will consist of tens of millions of members such that individual joinder in this case is impracticable.

194. **Commonality**: Numerous questions of law and fact are common to the claims of the Plaintiff and members of the proposed classes. These include, but are not limited to:

a. Whether there is a relevant antitrust product market for smartphones;

b. Whether Apple has unlawfully monopolized the smartphone market;

c. Whether purchasers and users of smartphones have been harmed, including by way of having paid more for smartphones than they would have but for Apple's allegedly anticompetitive conduct;

d. Whether Plaintiff and members of the proposed classes are entitled to declaratory or injunctive relief to halt Apple's unlawful practices, and to their attorney fees, costs, and expenses; and

e. Whether Plaintiff and members of the proposed classes are entitled to any damages or restitution incidental to the declaratory or injunctive relief they seek, or otherwise, and to their attorney fees, costs, and expenses related to any recovery of such monetary relief.

195. **Typicality**: Plaintiff's claims are typical of the claims of the members of the proposed classes. The factual and legal bases of Apple's liability are the same and resulted in injury to Plaintiff and all of the other members of the proposed classes.

196. **Adequate representation**: Plaintiff will represent and protect the interests of the proposed classes both fairly and adequately. Plaintiff has retained counsel competent and experienced in complex class-action litigation. Plaintiff has no interests that are antagonistic to those of the proposed classes, and his interests do not conflict with the interests of the proposed classes he seeks to represent.

197. **Prevention of inconsistent or varying adjudications**: If prosecution of myriad individual actions for the conduct complained of were undertaken, there may be inconsistent or varying results. This would have the effect of establishing incompatible standards of conduct for Apple. Certification of Plaintiff's proposed classes would prevent these undesirable outcomes.

198. **Injunctive and declaratory relief**: By way of its conduct described in this complaint, Apple has acted on grounds that apply generally to the proposed classes. Accordingly, final injunctive relief or corresponding declaratory relief is appropriate respecting the class as a whole.

199. **Predominance and superiority**: This proposed class action is appropriate for certification. Class proceedings on these facts and this law are superior to all other available methods for the fair and efficient adjudication of this controversy, given that joinder of all members is impracticable. Even if members of the proposed classes could sustain individual litigation, that

course would not be preferable to a class action because individual litigation would increase the delay and expense to the parties due to the complex factual and legal controversies present in this matter. Here, the class action device will present far fewer management difficulties, and it will provide the benefit of a single adjudication, economies of scale, and comprehensive supervision by this Court. Further, uniformity of decisions will be ensured.

XIII. STANDING AND ANTITRUST INJURY

200. Plaintiff purchased iPhones at a price alleged to be inflated as a result of Apple's anticompetitive and monopolistic practices, as alleged herein. Apple therefore caused Plaintiff to suffer overcharge damages.

201. Charging supracompetitive prices to purchasers like Plaintiff was the purpose and direct effect of Apple's alleged monopolization conduct.

202. Although Plaintiff and Members of the Class purchased iPhones indirectly from Apple, the direct purchasers (telecommunications companies and other retail outlets) passed all or virtually all of the overcharge on to Plaintiff and Members of the Class.

203. Telecommunications carriers and retail outlets make profits off the related telecommunications services that are required to make the iPhones work, and not the iPhones themselves.[38]

204. Because Apple continues to engage in the anticompetitive practices alleged in this Complaint, Plaintiff is reasonably likely to incur future overcharges when they purchase additional and/or replacement smartphones. Plaintiff has standing as purchasers of products and services sold at inflated prices. Both the actual harm and the threat of future harm are cognizable antitrust injuries directly caused by Defendant's violations of state and federal antitrust laws. The full amount of such overcharge damages will be calculated after discovery and upon proof at trial.

[38] https://www.cnet.com/tech/mobile/why-at-t-actually-doesnt-mind-when-smartphone-sales-drop/

XIV. VIOLATIONS ALLEGED

COUNT I

MONOPOLIZATION AND MONOPOLISTIC SCHEME UNDER STATE LAW

205. Plaintiff repeats and incorporates the above paragraphs as though fully set forth herein.

206. Count One is pled under the antitrust laws of each jurisdiction identified below, and is brought on behalf of Plaintiff and the Damages Class.

207. Smartphones are a relevant antitrust market, and Apple has monopoly power in that market.

208. Apple has unlawfully maintained its monopoly of the smartphone market through an exclusionary course of conduct and the anticompetitive acts described herein. Apple created this scheme with the intent to monopolize and exclude competition.

209. Apple's anticompetitive acts include, but are not limited to, its "lock in" scheme alleged above. This scheme includes the "five pillars" alleged above, i.e. blocking super apps, frustrating cloud streaming, locking in users through Apple Watch interoperability, diminishing cross-smartphone messaging communication, and frustrating cross-platform digital wallet apps. This scheme was accomplished by programming the software in the iPhone device, as well as through contractual restrictions against app creation, distribution, and access to APIs that were necessary to these "five pillars."

210. Apple's interrelated and interdependent actions have had a cumulative and self-reinforcing effect that has harmed competition and the competitive process. Apple's anticompetitive acts have had harmful effects on competition and consumers.

211. Apple's exclusionary conduct lacks a procompetitive justification that offsets the harm caused by Apple's anticompetitive and unlawful conduct.

212. By engaging in the foregoing conduct, Apple violated the following laws:

a. Ala. Code § 8-10-3 with respect to Class Members' purchases in Alabama.

b. Ariz. Arizona Rev. Stat. §§ 44-1401, *et seq*., including Ariz. Rev. Stat. § 44-1403, with respect to Class Members' purchases in Arizona.

c. Cal. Bus. & Prof. Code §§ 16700, *et seq*., and §§ 17200, et seq., with respect to Class Members' purchases in California.

d. Conn. Gen. Stat. §§ 35-24, *et seq*., with respect to Class Members' purchases in Connecticut.

e. D.C. Code §§ 28-4501, *et seq*., with respect to Class Members' purchases in the District of Columbia.

f. Fla. Stat. §§ 501.201, *et seq*., with respect to Class Members' purchases in Florida.

g. 740 Ill. Comp. Stat. 10/1, *et seq*., including 740 Ill. Comp. Stat. 10/3, with respect to Class Members' purchases in Illinois.

h. Iowa Code §§ 553.1 *et seq*., including Iowa Code § 553.5, with respect to Class Members' purchases in Iowa.

i. Kan. Stat. Ann. §§ 50-101, *et seq*., including Kan. Stat. Ann. § 50-132, with respect to Class Members' purchases in Kansas.

j. Me. Rev. Stat. Ann. tit. 10, §§ 1101, *et seq*., including Me. Rev. Stat. Ann. tit. 10, §1102, with respect to Class Members' purchases in Maine;

k. Md. Code Com. Law § 11-201, *et seq*., including Md. Code Com. Law § 11-204, with respect to Class Members' purchases in Maryland.

l. Mich. Comp. Laws Ann. §§ 445.771, *et seq*., with respect to Class Members' purchases in Michigan.

m. Minn. Stat. Ann. §§ 325D.49, *et seq*., including Minn. Stat. Ann. § 325D.52 and Minn. Stat. Ann. § 8.31, *et seq*., with respect to Class Members' purchases in Minnesota.

n. Miss. Code Ann. §§ 75-21-3, *et seq*., with respect to Class Members' purchases in Mississippi.

o. Neb. Code Ann. §§ 59-801, *et seq*., including Neb. Code Ann. § 59-802, with respect to Class Members' purchases in Nebraska.

p. Nev. Rev. Stat. Ann. §§ 598A.010, *et seq.*, including Nev. Rev. Stat. Ann. § 598A.060, with respect to Class Members' purchases in Nevada.

q. N.H. Rev Stat. Ann. §§ 356.1, *et seq.*, including N.H. Rev. Stat. Ann. § 356.3, with respect to Class Members' purchases in New Hampshire.

r. N.M. Stat. Ann. §§ 57-1-1, *et seq.*, including N.M. Stat. Ann. § 57-1-2, with respect to Class Members' purchases in New Mexico.

s. N.Y. Gen. Bus. Law §§ 340, *et seq.*, with respect to Class Members' purchases in New York.

t. N.C. Gen. Stat. Ann. §§ 75-1, *et seq.*, including N.C. Gen. Stat. Ann. § 75-2.1, with respect to Class Members' purchases in North Carolina.

u. N.D. Cent. Code §§ 51-08.1-01, *et seq.*, including N.D. Cent. Code §§ 51- 08.1-03, with respect to Class Members' purchases in North Dakota.

v. Or. Rev. Stat. §§ 646.705, *et seq.*, including Or. Rev. Stat. §§ 646.730, with respect to Class Members' purchases in Oregon.

w. 10 L.P.R.A. §§ 260, *et seq.*, with respect to Class Members' purchases in Puerto Rico.

x. R.I. Gen. Laws §§ 6-36-1, *et seq.*, including R.I. Gen. Laws §§ 6-36-5, with respect to Class Members' purchases in Rhode Island.

y. S.D. Codified Laws §§ 37-1-3.1, *et seq.*, including S.D. Codified Laws §§ 37-1-3.2, with respect to Class Members' purchases in South Dakota.

z. Tenn. Code Ann §§ 47-25-101, *et seq.*, with respect to Class Members' purchases in Tennessee.

aa. Utah Code Ann. §§ 76-10-3101, *et seq.*, including Utah Code Ann. §§ 76-10-3104, with respect to purchases in Utah by Humana that are Utah residents or citizens.

bb. Vt. Stat. Ann. tit. 9, §§ 2451, *et seq.*, with respect to Class Members' purchases in Vermont.

cc. W.Va. Code §§ 47-18-1, *et seq.*, including § 47-18-4, with respect to Class Members' purchases in West Virginia.

dd. Wis. Stat. §§ 133.01, *et seq.*, including Wis. Stat. §§ 133.04, with respect to Class Members' purchases in Wisconsin.

213. As a result of the unlawful and anticompetitive conduct described above, Class members paid inflated prices for iPhones.

214. Plaintiff has provided contemporaneous notice to the attorneys general of the following states in filing this complaint: Alabama, Alaska, Arizona, California, Connecticut, Hawaii, Illinois, Kansas, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nevada, New York, Oregon, Rhode Island, South Carolina, Utah, Vermont, West Virginia, and Wisconsin.

COUNT II

ATTEMPTED MONOPOLIZATION UNDER STATE LAW

215. Count Two is pled under the antitrust laws of each jurisdiction identified below, and is brought on behalf of Plaintiff and the Damages Class..

216. Smartphones are a relevant antitrust market, and Apple has monopoly power in that market.

217. In the alternative, if Apple does not have monopoly power, it has a dangerous potential of achieving it.

218. Apple has attempted to monopolize the smartphone market through an exclusionary course of conduct and the anticompetitive acts described herein. Apple created this scheme with the intent to monopolize and exclude competition.

219. Apple's anticompetitive acts include, but are not limited to, its "lock in" scheme alleged above. This scheme includes the "five pillars" alleged above, i.e. blocking super apps, frustrating cloud streaming, locking in users through Apple Watch interoperability, diminishing cross-smartphone messaging communication, and frustrating cross-platform digital wallet apps. This scheme was accomplished by programming the software in the iPhone device, as well as

through contractual restrictions against app creation, distribution, and access to APIs that were necessary to these "five pillars."

220. Apple's interrelated and interdependent actions have had a cumulative and self-reinforcing effect that has harmed competition and the competitive process. Apple's anticompetitive acts have had harmful effects on competition and consumers.

221. Apple's exclusionary conduct lacks a procompetitive justification that offsets the harm caused by Apple's anticompetitive and unlawful conduct.

222. By engaging in the foregoing conduct, Apple violated the following state laws:

ee. Ala. Code § 8-10-3 with respect to Class Members' purchases in Alabama.

ff. Ariz. Rev. Stat. Ann. §§ 44-1401, *et seq.*, including Ariz. Rev. Stat. § 44-1403, with respect to Class Members' purchases in Arizona.

gg. Cal. Bus. & Prof. Code §§ 16700, *et seq.*, and §§ 17200, et seq., with respect to Class Members' purchases in California.

hh. Conn. Gen. Stat. §§ 35-24, *et seq.*, with respect to Class Members' purchases in Connecticut.

ii. D.C. Code §§ 28-4501, *et seq.*, with respect to Class Members' purchases in the District of Columbia.

jj. Fla. Stat. §§ 501.201, *et seq.*, with respect to Class Members' purchases in Florida.

kk. 740 Ill. Comp. Stat. 10/1, *et seq.*, including 740 Ill. Comp. Stat. 10/3, with respect to Class Members' purchases in Illinois.

ll. Iowa Code §§ 553.1 *et seq.*, including Iowa Code § 553.5, with respect to Class Members' purchases in Iowa.

mm. Kan. Stat. Ann. §§ 50-101, *et seq.*, including Kan. Stat. Ann. § 50-132, with respect to Class Members' purchases in Kansas.

nn. Me. Rev. Stat. Ann. tit. 10, §§ 1101, *et seq.*, including Me. Rev. Stat. Ann. tit. 10, §1102, with respect to Class Members' purchases in Maine;

oo. Md. Code Com. Law § 11-201, *et seq.*, including Md. Code Com. Law § 11-204, with respect to Class Members' purchases in Maryland.

pp. Mich. Comp. Laws Ann. §§ 445.771, *et seq.*, with respect to Class Members' purchases in Michigan.

qq. Minn. Stat. Ann. §§ 325D.49, *et seq.*, including Minn. Stat. Ann. § 325D.52 and Minn. Stat. Ann. § 8.31, *et seq.*, with respect to Class Members' purchases in Minnesota.

rr. Miss. Code Ann. §§ 75-21-3, *et seq.*, with respect to Class Members' purchases in Mississippi.

ss. Neb. Code Ann. §§ 59-801, *et seq.*, including Neb. Code Ann. § 59-802, with respect to Class Members' purchases in Nebraska.

tt. Nev. Rev. Stat. Ann. §§ 598A.010, *et seq.*, including Nev. Rev. Stat. Ann. § 598A.060, with respect to Class Members' purchases in Nevada.

uu. N.H. Rev Stat. Ann. §§ 356.1, *et seq.*, including N.H. Rev. Stat. Ann. § 356.3, with respect to Class Members' purchases in New Hampshire.

vv. N.M. Stat. Ann. §§ 57-1-1, *et seq.*, including N.M. Stat. Ann. § 57-1-2, with respect to Class Members' purchases New Mexico.

ww. N.Y. Gen. Bus. Law §§ 340, *et seq.*, with respect to Class Members' purchases in New York.

xx. N.C. Gen. Stat. Ann. §§ 75-1, *et seq.*, including N.C. Gen. Stat. Ann. § 75-2.1, with respect to Class Members' purchases in North Carolina.

yy. N.D. Cent. Code §§ 51-08.1-01, *et seq.*, including N.D. Cent. Code §§ 51-08.1-03, with respect to Class Members' purchases in North Dakota.

zz. Or. Rev. Stat. §§ 646.705, *et seq.*, including Or. Rev. Stat. §§ 646.730, with respect to Class Members' purchases in Oregon.

aaa. 10 L.P.R.A. §§ 260, *et seq.*, with respect to Class Members' purchases in Puerto Rico.

bbb. R.I. Gen. Laws §§ 6-36-1, *et seq.*, including R.I. Gen. Laws §§ 6-36-5, with respect to Class Members' purchases in Rhode Island.

ccc. S.D. Codified Laws §§ 37-1-3.1, *et seq.*, including S.D. Codified Laws §§ 37-1-3.2, with respect to Class Members' purchases in South Dakota.

ddd. Tenn. Code Ann §§ 47-25-101, *et seq.*, with respect to Class Members' purchases in Tennessee.

eee. Utah Code Ann. §§ 76-10-3101, *et seq.*, including Utah Code Ann. §§ 76-10-3104, with respect to purchases in Utah by Utah residents or citizens who are Humana.

fff. Vt. Stat. Ann. tit. 9, §§ 2451, *et seq.*, with respect to Class Members' purchases in Vermont.

ggg. W.Va. Code §§ 47-18-1, *et seq.*, including § 47-18-4, with respect to Class Members' purchases in West Virginia.

hhh. Wis. Stat. §§ 133.01, *et seq.*, including Wis. Stat. §§ 133.04, with respect to Class Members' purchases in Wisconsin.

223. As a result of the unlawful and anticompetitive conduct described above, Class Members paid artificially inflated prices for iPhones.

COUNT THREE

VIOLATION OF CALIFORNIA'S UNFAIR COMPETITION LAW

224. Plaintiff repeats and incorporates the above paragraphs as though fully set forth herein.

225. Count Four is brought on behalf of Plaintiff and the Nationwide Class.

226. Apple's conduct described above constitutes unfair, unlawful, or fraudulent business acts or practices as proscribed by California's Unfair Competition Law, Cal. Bus. & Prof. Code § 17200, et seq. (the "UCL").

227. Apple's "five pillar" approach to eroding the value of its iPhones, and limiting the options of its users, violates each distinct prong of the UCL.

228. Apple's conduct is "unfair": Apple's "lock in" campaign is unethical, unscrupulous, against public policy, and violated fundamental rules of honesty and fair dealing, because it frustrated innovation and diminished consumer choice. Smartphones are a practical

necessity for most Americans, who need these devices to conduct their business and social lives in the information age.

229. Apple has locked Americans into dependence on its iPhone platform, and frustrated competing technology.

230. Apple's conduct is unfair because it violates Section 2 of the Sherman Act, and the strong California public policy against monopoly. *See In re Lynwood Herald Am.*, 152 Cal. App. 2d 901, 909 (1957) (it is the "established policy of this state … to encourage competitive enterprise and to proscribe monopolistic tendencies.").

231. Apple's conduct is "unlawful.": Apple's conduct violates both the spirit and letter of Section 2 of the Sherman Act, and California's common law prohibition on monopolies.

232. Plaintiff and the Nationwide Class lost money because they paid inflated prices for iPhones, and seek the full extent of restitution available under the UCL for Apple's conduct alleged herein.

233. California has a strong interest in applying its unfair competition law on a nationwide basis. Apple is based in California, and the "lock in" scheme described above was designed in implemented in California.

234. Applying California's Unfair Competition Law to a nationwide class does not contravene the policy of states that have declined to repeal the U.S. Supreme Court's decision in *Illinois Brick Co. v. Illinois*, 431 U.S. 720 (1977), because the UCL does not carry with it the treble damages remedy that the Cartwright Act and other antitrust statutes have. Every state has a public policy condemning monopolies or monopolistic conduct, even if they do not provide a remedy under antitrust laws for indirect purchasers, as the restriction against monopolies has deep common law roots.[39]

COUNT FIVE

UNJUST ENRICHMENT UNDER STATE LAW

[39] William L. Letwin, *The English common Law Concerning Monopolies*, 21 U. Chi. L. Rev. 355, 358 (addressing Rotuli Parliamentorum, 50 Edw. III, No. 33 (1376)).

235. Plaintiff repeats and incorporates the above paragraphs as though fully set forth herein.

236. Count Five is pled under the laws of each jurisdiction identified below, and is brought on behalf of Plaintiff and the Nationwide Class.

237. Apple directly benefitted from monopoly profits on the sale of iPhones resulting from the unlawful and inequitable acts alleged in this Complaint.

238. Apple's financial benefit resulting from its unlawful and inequitable acts is traceable to overpayments for iPhones by Plaintiff and Class Members.

239. Plaintiff and Class Members have conferred upon Apple an economic benefit, profits from unlawful overcharges and monopoly profits, to the economic detriment of Plaintiff and Class Members.

240. The economic benefit of overcharges and monopoly profits derived by Apple through charging supracompetitive and artificially inflated prices for iPhones is a direct and proximate result of Apple's unlawful conduct.

241. The economic benefits derived by Apple rightfully belong to Plaintiff and Class Members, as they paid anticompetitive and monopolistic prices for iPhones.

242. It would be inequitable under unjust enrichment principles under the law of the District of Columbia and the laws of all states and territories in the United States for Defendants to be permitted to retain any of the overcharges for iPhones derived from Apple's unfair and unconscionable methods, acts, and trade practices alleged in this Complaint. Plaintiff and Class Members assert claims under all such states' laws.

243. Apple is aware of and appreciates the benefits bestowed upon them by Plaintiff and Class Members.

244. Defendants should be compelled to disgorge in a common fund for the benefit of Plaintiff and Members of the Class all unlawful or inequitable proceeds they received.

245. A constructive trust should be imposed upon all unlawful or inequitable sums received by Defendants traceable to Plaintiff and Members of the Class.

COUNT FOUR

MONOPOLIZATION IN VIOLATION OF SHERMAN ACT § 2

246. Plaintiff repeats and incorporates the above paragraphs as though fully set forth herein.

247. Count Five is plead under Section 2 of the Sherman Act, 15 U.S.C. § 2 on behalf of Plaintiff and the Nationwide Class.

248. Smartphones are a relevant antitrust market, and Apple has monopoly power in that market.

249. Apple has unlawfully maintained its monopoly of the smartphone market through an exclusionary course of conduct and the anticompetitive acts described herein. Apple created this scheme with the intent to monopolize and exclude competition.

250. Apple's anticompetitive acts include, but are not limited to, its "lock in" scheme alleged above. This scheme includes the "five pillars" alleged above, i.e. blocking super apps, frustrating cloud streaming, locking in users through Apple Watch interoperability, diminishing cross-smartphone messaging communication, and frustrating cross-platform digital wallet apps. This scheme was accomplished by programming the software in the iPhone device, as well as through contractual restrictions against app creation, distribution, and access to APIs that were necessary to these "five pillars."

251. Apple's interrelated and interdependent actions have had a cumulative and self-reinforcing effect that has harmed competition and the competitive process. Apple's anticompetitive acts have had harmful effects on competition and consumers.

252. Apple's exclusionary conduct lacks a procompetitive justification that offsets the harm caused by Apple's anticompetitive and unlawful conduct.

XV. REQUEST FOR RELIEF

WHEREFORE, Plaintiff respectfully requests the following relief:

A. That the Court certify this case as a class action and that it appoint Plaintiff as class representatives and their counsel as class counsel;

B. That the Court award Plaintiff and the proposed classes all appropriate relief, to include, but not be limited to, injunctive relief requiring that Apple cease the abusive, unlawful, and anticompetitive practices described herein; declaratory relief, adjudging such practices unlawful; as well as monetary relief, whether by way of restitution or damages, including treble damages, or other multiple or punitive damages, or restitution, where mandated by law or equity or as otherwise available; together with recovery of the costs of suit, to include reasonable attorneys' fees, costs, and expenses, together with pre- and post-judgment interest to the maximum levels permitted by law or equity.

C. That the Court grant such additional orders or judgments as may be necessary to prevent the unlawful practices complained of herein; and

D. That the Court award Plaintiff and the proposed classes such other, favorable relief as may be available and appropriate under federal or state law, or at equity.

JURY TRIAL DEMANDED

Plaintiff demands a trial by jury on all claims so triable.

Dated: April 2, 2024 Respectfully submitted,

/s/ Matthew S. Weiler
Todd M. Schneider (SBN 158253)
Matthew S. Weiler (SBN 236052)
SCHNEIDER WALLACE
COTTRELL KONECKY LLP
2000 Powell Street, Suite 1400
Emeryville, California 94608
Telephone: (415) 421-7100
Email: tschneider@schneiderwallace.com
Email: mweiler@schneiderwallace.com

Jason H. Kim (SBN 220279)
SCHNEIDER WALLACE
COTTRELL KONECKY LLP
300 S. Grand Avenue, Suite 2700

Los Angeles, California 90071
Telephone: (415) 421-7100
Email: jkim@schneiderwallace.com

Peter B. Schneider (*Pro Hac Vice*)
SCHNEIDER WALLACE COTTRELL KONECKY LLP
3700 Buffalo Speedway, Suite 960
Houston, TX 77098
Telephone: (713) 338-2560
PSchneider@schneiderwallace.com

Michael Dell'Angelo (*Pro Hac Vice*)
BERGER MONTAGUE
1818 Market Street, Suite 3600
Philadelphia, PA 19103
Telephone: (215) 875-3000
Email: mdellangelo@bm.net

Attorneys for Plaintiff